



University of  
Nottingham

UK | CHINA | MALAYSIA

# Animal Science



Discover it



Research it



[nottingham.ac.uk/biosciences](https://nottingham.ac.uk/biosciences)

Undergraduate guide 2020

## Contents

Why study with us?	4
How will I study?	6
Our courses	7
Industry placements	10
Study abroad	11
Careers and employability	12
How to apply	14
Experience it	15

## Ranked 1st in The Complete University Guide 2020

for agriculture  
and forestry

Flexible degree  
options to  
specialise  
in your area  
of interest



**Metabolism  
laboratories**  
for nutritional studies  
with farm animals



## 450 Hectare University Farm and Dairy Centre

with arable crops, 300 robotically  
milked cows, a sheep flock and  
environmental stewardship land



“ Studying animal science at the University of Nottingham has been wonderful! The course has a great mixture of practical and theory work that covers a wide range of topics, from micronutrition to physiology of tissues. The staff are also so enthusiastic about their subjects that it rubs off on you too, which creates a great learning environment for everyone. ”

Flo Jenkins,  
BSc Animal Science



## Opportunity to study abroad

including Australia,  
Canada and  
the USA



## Extensive links with companies and institutions

including Twycross Zoo  
and the Waltham Centre  
for Pet Nutrition

# Why study animal science at Nottingham?

Ranked 1st for our animal science course in The Complete University Guide 2020, our course offers a unique opportunity to develop your scientific understanding of fundamental and applied animal biology, with a broad spectrum of modules to specialise in your areas of interest.

## Teaching and research

You will be taught by subject specialists who are active researchers in the most rapidly developing areas of animal science, incorporating the latest research into their teaching. Many of our academic staff are also expert advisors to government institutions and industry.

## Industry connections

Nottingham is taking the national lead for dairy research as the Centre for Dairy Science Innovation. This has led to considerable investment and expansion in our dairy centre to support world-leading research in livestock health and production to deliver improved food security and farming sustainability.

You will also benefit from our extensive industrial and institutional research links such as AB Agri, Cargill, and The Stabiliser™ Cattle Company with visits and guest lectures from such organisations.

## Specialist options

The course offers a choice of four options, enabling you to focus on your area of interest:

### Bioveterinary Science

Examine the science underpinning animal health and disease, which prepares you well for studying Veterinary Medicine post-degree.

### Physiology and Biotechnology

Learn from specialists undertaking pioneering research. You'll study animal structure and function including stem cell and developmental biology.

### Livestock Production

Investigate the science of farm animal nutrition, productivity and fertility. You'll benefit from the Centre for Dairy Science Innovation and industry collaborations.

### Ecology and Conservation

Focus on the science, management and welfare of zoo and captive animals. You'll be able to take advantage of our strong links with Twycross Zoo.

# Our courses

Degree title	UCAS code	Duration	A levels	IB
<b>Single honours</b>				
BSc Animal Science	D320	3 years	ABB-BBB	32-30
MSci Animal Science	D322	4 years	ABB-BBB	32-30

\* Including two science-based subjects (biology and chemistry preferred, but can include physics, maths, psychology and geography). Citizenship studies, critical thinking, general studies and leisure studies are not accepted. We may also consider ABC depending on predicted grades in specific subjects.

## Foundation courses

Applicants who are not eligible for direct entry to undergraduate study may be able to apply for a foundation course. Find out more at [nottingham.ac.uk/foundationcourses](http://nottingham.ac.uk/foundationcourses)

## English language requirements

IELTS 6.0 (no less than 5.5 in any element). For details of other English language tests and qualifications we accept, please see [nottingham.ac.uk/go/alternativerequirements](http://nottingham.ac.uk/go/alternativerequirements)

## Academic English preparation

If you require additional support to take your language skills to the required level, you may be able to attend a pre-sessional course at the Centre for English Language Education, which is accredited by the British Council for the teaching of English in the UK.

Students who successfully complete the pre-sessional course to the required level can progress onto their chosen degree course without retaking IELTS or equivalent. Find out more at [nottingham.ac.uk/cele](http://nottingham.ac.uk/cele)

## What's an MSci?

MSci degrees are undergraduate-level courses which last for four years and have an integrated masters qualification. They are the equivalent to a bachelors degree plus a masters level qualification. These courses usually provide additional industry and/or research experience to enhance your future prospects. An MSci is excellent preparation for further study such as a PhD.

If you choose to study an MSci, your student loan will cover tuition fees and living costs for the additional year too (home/EU students only). If you are unsure on whether to choose an MSci or BSc, we recommend you choose the MSci to secure your funding. Transfer to the BSc is possible.

# Engaging study, incredible results

Experience an integrated range of teaching and learning styles, from traditional lectures and practicals to small-group discussions and tutorials.

## Modules

Modules are self-contained units of study that usually run for one semester but some are year-long. All our undergraduate programmes are modular with assessment at the end of each module. Although some modules are core, you can choose from a diverse range of other optional modules.

## Inspiring tutors

**Prof. Ramiro Alberio**  
Professor in Developmental Epigenetics

Dr Alberio's group investigates the cellular mechanisms that determine the formation of different cells (such as gut, muscle or nervous system) in an animal. He uses animal embryos to study how these decisions are made early in development and models the findings in embryos with in vitro tools, such as embryonic stem cells, to dissect what genes are important for directing cell fate. This research teaches us about the general principles of developmental biology, but it also has important applications for regenerative medicine. Understanding how cells form and arrange themselves in an embryo can be used to generate cells in a laboratory that can be used for transplantation or for disease modelling.

## Your research project

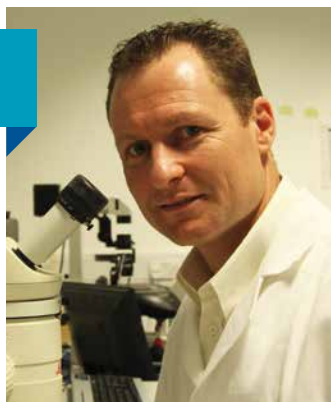
The final year research project allows you to work on your chosen area, typically supervised by research scientists, and provides the opportunity for you to demonstrate your abilities to future employers. It can involve independent study, a literature survey and data handling, analysis and interpretation.

## Your personal tutor

Throughout your degree you will have a personal tutor on hand to offer support with your academic progress and general wellbeing.

## How will I be assessed?

Our courses are assessed in a variety of ways, including exams, coursework assignments, a dissertation, computing assignments, essays, oral presentations, posters and laboratory reports. The final degree classification is based on marks gained for the second and subsequent years of study.



# BSc | MSci Animal Science

Studying animal science at Nottingham gives you a scientific understanding of fundamental and applied animal biology, and the flexibility to choose areas of interest to meet your career aspirations.

Animal science is important for understanding the physiology that leads to improvements in the productivity of livestock, and the health and welfare of companion and zoo animals. This requires well-trained and adaptable scientists who can apply their knowledge and understanding.

Field trips and visits to relevant research organisations are also an integral part of the degree. The final year research project is a major strength of the course and we offer a wide range of projects working in close collaboration with animals and/or undertaking laboratory procedures, or involving the in-depth study of scientific literature in an area of your interest.

The course offers a broad curriculum covering the following:

- Fundamental and applied animal biology
- Developmental biology and reproduction
- Physiology, biochemistry and nutrition
- Bioethics and animal welfare

## Year one

During year one, you will take a broad range of modules covering all aspects of animal science, from cells to practical animal handling. This multi-disciplinary background will provide you with a solid foundation for subsequent specialisation in your area of interest.

## Years two and three

From year two, depending on your interests and future career aspirations, you will be able to select one of the four following options:

### Bioveterinary Science

- Examines the science underpinning animal health and disease

### Ecology and Conservation

- Focuses on the science, management and welfare of zoo and captive animals

### Livestock Production

- Investigates the science of farm animal nutrition, productivity and fertility

### Physiology and Biotechnology

- Studies animal structure and function including stem cell and developmental biology

You will carry out a major research project in a supervised environment. You will have the opportunity to work with animals (livestock, companion, zoo, or laboratory species) and/or undertake laboratory procedures to study animal physiology, biochemistry or biology.

## Year four (MSci only)

- This additional year enables you to graduate with an integrated masters level qualification developing the skills needed in the co-ordination of research projects.
- You will embark on a sizeable level of research activity underpinned by modules covering how to write research proposals, statistics, project management, public engagement, and communication skills.

## Typical modules

Year one	Year two	Year three	Year four (MSci only)		
<p><b>Core</b></p> <ul style="list-style-type: none"> <li>■ Basic Animal Biology</li> <li>■ Applied Animal Biology</li> <li>■ Introductory Physiology</li> <li>■ Introductory Anatomy</li> <li>■ Biochemistry – the Building Blocks of Life</li> <li>■ Introduction to Nutrition</li> <li>■ Genes and Cells</li> <li>■ Applied Genetics</li> <li>■ Biosciences Tutorials</li> </ul>	<p><b>Bioveterinary Science option</b></p> <p><b>Core</b></p> <ul style="list-style-type: none"> <li>■ Endocrine Control Systems</li> <li>■ Principles of Immunology</li> <li>■ Bioveterinary Work Experience</li> <li>■ Research Techniques for Bioscientists</li> <li>■ Physiology of Electrically Excitable Tissues</li> <li>■ Principles of Animal Health and Disease 1</li> </ul> <p><b>Optional</b></p> <ul style="list-style-type: none"> <li>■ Reproductive Physiology</li> <li>■ Principles of Animal Nutrition</li> <li>■ Virology</li> <li>■ Animal Behaviour</li> </ul> <p><b>Ecology and Conservation option</b></p> <p><b>Core</b></p> <ul style="list-style-type: none"> <li>■ Endocrine Control Systems</li> <li>■ Reproductive Physiology</li> <li>■ Research Techniques for Bioscientists</li> <li>■ Physiology of Electrically Excitable Tissues</li> <li>■ Animal Behaviour</li> </ul> <p><b>Optional</b></p> <ul style="list-style-type: none"> <li>■ Ecology</li> <li>■ Principles of Animal Health and Disease 1</li> <li>■ Biological Photography and Imaging</li> <li>■ Evolutionary Biology of Animals</li> </ul>	<p><b>Livestock Production option</b></p> <p><b>Core</b></p> <ul style="list-style-type: none"> <li>■ Endocrine Control Systems</li> <li>■ Reproductive Physiology</li> <li>■ Principles of Animal Nutrition</li> <li>■ Applied Animal Science</li> <li>■ Research Techniques for Bioscientists</li> <li>■ Principles of Animal Health and Disease 1</li> </ul> <p><b>Optional</b></p> <ul style="list-style-type: none"> <li>■ Physiology of Electrically Excitable Tissues</li> <li>■ Animal Behaviour</li> <li>■ Applied Agricultural and Food Marketing</li> <li>■ Economic Analysis for Agricultural and Environmental Sciences</li> </ul> <p><b>Physiology and Biotechnology option</b></p> <p><b>Core</b></p> <ul style="list-style-type: none"> <li>■ Endocrine Control Systems</li> <li>■ Reproductive Physiology</li> <li>■ Principles of Immunology</li> <li>■ Research Techniques for Bioscientists</li> <li>■ Physiology of Electrically Excitable Tissues</li> <li>■ Epigenetics and Developmental Biotechnology</li> </ul> <p><b>Optional</b></p> <ul style="list-style-type: none"> <li>■ Virology</li> <li>■ Principles of Animal Nutrition</li> <li>■ Principles of Animal Health and Disease 1</li> <li>■ Animal Behaviour</li> </ul>	<p><b>Bioveterinary Science option</b></p> <p><b>Core</b></p> <ul style="list-style-type: none"> <li>■ Research Project</li> <li>■ Bioethics 1</li> <li>■ Coordinated Physiological Functions</li> <li>■ Musculoskeletal Physiology</li> <li>■ Principles of Animal Health and Disease 2</li> <li>■ Systems Neurophysiology</li> </ul> <p><b>Optional</b></p> <ul style="list-style-type: none"> <li>■ Animal Nutrition</li> <li>■ Companion Animal Science</li> <li>■ Reproduction and Fertility</li> </ul> <p><b>Ecology and Conservation option</b></p> <p><b>Core</b></p> <ul style="list-style-type: none"> <li>■ Research Project</li> <li>■ Bioethics 1</li> <li>■ Companion Animal Science</li> <li>■ Conservation</li> <li>■ Reproduction and Fertility</li> </ul> <p><b>Optional</b></p> <ul style="list-style-type: none"> <li>■ Evolutionary Ecology</li> <li>■ Conservation Genetics</li> <li>■ Bioethics 2</li> </ul>	<p><b>Livestock Production option</b></p> <p><b>Core</b></p> <ul style="list-style-type: none"> <li>■ Research Project</li> <li>■ Bioethics 1</li> <li>■ Livestock Production Science</li> <li>■ Animal Nutrition</li> </ul> <p><b>Optional</b></p> <ul style="list-style-type: none"> <li>■ Companion Animal Science</li> <li>■ Principles of Animal Health and Disease 2</li> <li>■ Reproduction and Fertility</li> </ul> <p><b>Physiology and Biotechnology option</b></p> <p><b>Core</b></p> <ul style="list-style-type: none"> <li>■ Research Project</li> <li>■ Bioethics 1</li> <li>■ Coordinated Physiological Functions</li> <li>■ Biotechnology in Animal Physiology</li> <li>■ Reproduction and Fertility</li> <li>■ Systems Neurophysiology</li> </ul> <p><b>Optional</b></p> <ul style="list-style-type: none"> <li>■ Molecular Nutrition</li> <li>■ Bioethics 2</li> <li>■ Principles of Animal Health and Disease 2</li> </ul>	<ul style="list-style-type: none"> <li>■ MSci Research Project</li> <li>■ Statistics and Experimental Design for Bioscientists</li> <li>■ Writing and Reviewing Research Proposals</li> <li>■ Project Management</li> <li>■ Communication and Public Engagement Skills for Scientists</li> </ul>

Modules may change, for example due to curriculum developments. The above list is a sample of typical modules that we offer, not a definitive list. The most up-to-date information can be found on our website at [nottingham.ac.uk/ugstudy/biosciences](http://nottingham.ac.uk/ugstudy/biosciences)

## Apply your knowledge

**During the year in industry you can put your learning into practice, giving you a better understanding of your studies and the chance to solidify your knowledge in an industry setting.**

An industry placement allows you to develop a range of skills while, in the majority of cases, being paid a salary.

The year's work experience, which can be in the UK or abroad, can significantly improve your employment prospects. Some students even secure a graduate job as a direct result of their placement year.

You are treated by your host company just the same as any other employee, being given real responsibility and the opportunity to work independently in a professional setting. You can gain experience of how to communicate with people from a range of backgrounds, work to tight deadlines, manage multiple projects and deal with conflicting priorities. It's a unique opportunity for you to learn about what you enjoy doing, your strengths and weaknesses, and the kind of environment you like working in, which will put you in a strong position when considering your future career.

The school has excellent links with a wide range of businesses and research institutes. The dedicated School Placement Team works with you in partnership to help you search, apply for and secure a placement, as well as supporting you throughout your placement. Some examples of relevant companies include: The Waltham Centre for Pet Nutrition, the Centre for Environment, Fisheries and Aquaculture Science, McDonald's, the Game and Wildlife Conservation Trust, Whitley Wildlife Trust, and AB Agri.



“Doing a placement year has helped me gain experience in a sector I eventually want to work in. My highlights have definitely been the practical work and the bird surveys. I've learned so much about bird identification and behaviour and how behaviour changes across species and the seasons. Other highlights include the outreach and public engagement work.”

Maria Scullion,  
BSc Animal Science  
Industry placement at the Wildfowl and Wetlands Trust

## Expand your horizons

**Animal science is a global subject and studying at one of our highly ranked university partners abroad will give you the unique opportunity to see your degree from a different perspective.**

Studying abroad takes you out of your comfort zone, helping you to develop valuable skills, such as independence and resilience, which are attractive to future employers. The School of Biosciences offers a range of study abroad opportunities.

### University-wide exchange programme

This prestigious programme gives you the opportunity to apply to study abroad for the first semester of year two. Successful candidates will study at one of our highly-ranked partner universities in a variety of locations, including Australia, Canada or New Zealand.

### International year

Combining animal science with an additional international year offers the opportunity to study abroad at one of our partner universities, in France or Spain for example. You can transfer to this four-year route in your first semester of study.

### Finance

Studying abroad need not be any more expensive than studying in Nottingham if you budget your finances well and take advantage of available funding. The University offers a number of bursaries and scholarships to students studying abroad.

All students who participate in one of the University's exchange programmes pay a reduced tuition fee to the University of Nottingham during the academic year when they study abroad. No tuition fees are paid to the host university.




“Studying in Vienna was one of the best decisions I have ever made. It allowed me to get completely immersed in a different culture, meet new people and practice my language skills. This year has gone by so fast, I wish I didn't have to leave this amazing city!”

Darcie Stott,  
BSc Animal Science

# Your world for the taking

Our animal science degree is highly ranked nationally and is well regarded by a wide range of employers. The unique blend of fundamental science, practical application and insight into social perspectives has enabled graduates to follow a wide variety of careers.

**95%**   
of undergraduates  
had secured work  
or further study within  
six months of graduation\*

**£22,000**   
was the average starting salary



## Recent graduate destinations

- Further study in veterinary, biomedical and life sciences
- Science teaching, after one year of further study (Postgraduate Certificate in Education)
- Pharmaceutical industry
- Animal nutrition/feed industry
- Government advisory roles
- Academic and industrial research
- Agricultural consultancy
- Sales and marketing

## Further study opportunities

This course, in particular the Bioveterinary Science option, prepares you well for studying Veterinary Medicine post-degree.

Many of our graduates choose to progress to postgraduate study and research. We offer a one-year taught postgraduate MSc Animal Nutrition offering the opportunity to study farm, companion and zoo animal nutrition at an advanced level. Nottingham also offers a three-year part-time MSc Veterinary Physiotherapy through the School of Veterinary Medicine and Science.

## Amplify your potential

Academic excellence and employability go hand in hand at Nottingham. Your course, and the diverse student experiences we offer, will enable you to develop the skills and professional competencies required to thrive in the job market of the future.

Our team will support you as you build your CV, search for jobs, prepare applications, practise your interview technique, and much more.

## Get the Advantage

The career-enhancing Nottingham Advantage Award recognises and rewards your extracurricular activities. With a choice of over 200 modules, you can hone the key skills employers are looking for. From developing your leadership skills and learning a language to public speaking and volunteering, you will leave university with demonstrable experience that sets you apart from other graduates. For further information, visit [nottingham.ac.uk/careers/advantage](http://nottingham.ac.uk/careers/advantage)

“ My degree at Nottingham provided me with the confidence, skill set and determination to succeed in the working world. I was excited to find a career that allows me to mix brand new exciting science and writing with programme management. ”  
Anna Humber,  
Programme Executive at  
Axon Communications



How to apply

# How to apply

All applications for full-time undergraduate study at Nottingham, including applications by international students, must be made through UCAS.

You can apply online at [ucas.com](http://ucas.com) and will be notified of decisions through UCAS Track.

## Your personal statement

This is the section of your UCAS form that tells us most about you, and you should make the best use of it. Be as specific and detailed as you can – we would like to see that you are a student who can work hard, be self-motivated and make the best possible use of the opportunities that our courses offer you. We would also like to hear about any skills you have gained through extracurricular activities.

## Minimum entry requirements

Unless otherwise stated in individual course profiles, all UK applicants should have GCSE English grade 4 (C) as a minimum.

## Alternative qualifications

In this brochure you will find our A level and International Baccalaureate entry requirements but we accept a much broader range of qualifications. For more details, visit [nottingham.ac.uk/ugstudy/applying](http://nottingham.ac.uk/ugstudy/applying)

## Flexible admissions policy

In recognition of our applicants' varied experience and educational pathways, we employ a flexible admissions policy. If we judge that your situation has adversely affected your achievement, then we will consider this when

In 2019/20 the Core Bursary will offer up to £2,000 for each year of undergraduate study.\* For more details see: [nottingham.ac.uk/financialsupport](http://nottingham.ac.uk/financialsupport)

\* To eligible home fee status students.

assessing your academic potential. Some courses may make a slightly lower offer. For more information about this policy, see [nottingham.ac.uk/ugstudy/applying](http://nottingham.ac.uk/ugstudy/applying)

## Mature applicants

We encourage applications from mature students, who are defined as 21 years old and over. You should apply through UCAS. Find out more at [nottingham.ac.uk/mature](http://nottingham.ac.uk/mature)

## International applicants

The University provides a range of information and advice for international applicants. If you are unable to attend an open day, we can meet you in your country at one of our overseas events or arrange an individual visit to the University. For further information please visit [nottingham.ac.uk/international](http://nottingham.ac.uk/international)

## Deferred entry

Applicants who wish to defer their entry by a year will not be at a disadvantage. Please tell us something about your plans for your gap year in your UCAS personal statement.

## Equal opportunities policy

The University aims to create the conditions whereby students and staff are treated solely on the basis of their merits, abilities and potential, regardless of gender, race, colour, nationality, ethnic or national origin, age, socio-economic background, disability, religious or political beliefs, trade union membership, family circumstances, sexual orientation or other irrelevant distinction.

If you wish to declare a disability, please ensure that you have ticked the appropriate box on your UCAS application form. Disclosure of this information will not affect your application.

[nottingham.ac.uk/ugstudy/applying](http://nottingham.ac.uk/ugstudy/applying)

Experience it



Live and study abroad as part of your degree

[nottingham.ac.uk/studywithus/studyabroad](http://nottingham.ac.uk/studywithus/studyabroad)

Accommodation to suit every budget and personal choice

[nottingham.ac.uk/accommodation](http://nottingham.ac.uk/accommodation)



Explore the city for music, food and shopping

[nottingham.ac.uk/nottinghamlife](http://nottingham.ac.uk/nottinghamlife)

300+

clubs, societies and opportunities  
[su.nottingham.ac.uk](http://su.nottingham.ac.uk)



Student Service Centres on all UK campuses for support and advice

[nottingham.ac.uk/student-services](http://nottingham.ac.uk/student-services)



Sports University of the Year 2019\* with over 70 student sports clubs

[nottingham.ac.uk/sport](http://nottingham.ac.uk/sport)

\* The Times and The Sunday Times Good University Guide, 2019.

Join in with the vibrant musical life on campus and in the city

[nottingham.ac.uk/music/performance](http://nottingham.ac.uk/music/performance)



Choose from 9 modern languages

to study alongside your course

[nottingham.ac.uk/language-centre](http://nottingham.ac.uk/language-centre)







University of  
Nottingham

UK | CHINA | MALAYSIA



For undergraduate enquiries contact:  
Student Recruitment Support Hub



+44 (0)115 951 5559



[nottingham.ac.uk/contact](https://nottingham.ac.uk/contact)



UoNBiosciences



@UoNBiosciences @UoNScience

[nottingham.ac.uk/biosciences](https://nottingham.ac.uk/biosciences)

This publication  
is available in  
alternative formats:  
+44 (0)115 951 5559



© University of Nottingham 2019.  
All rights reserved. Printed May 2019.

This brochure has been drafted in advance of the academic year to which it applies. Every effort has been made to ensure that the information contained in this brochure is accurate at the time of publishing, but changes (for example to course content) are likely to occur given the interval between publication and commencement of the course. It is therefore very important to check our website for any updates before you apply for the course by following [nottingham.ac.uk/ugstudy](https://nottingham.ac.uk/ugstudy). Where there is a difference between the contents of this brochure and our website, the contents of the website take precedence.