Biology

NAME OF COURSE

BA Biology (3 years) or MBiol (4 years)

ADMISSIONS TEST

Candidates applying in 2020, will not have to take an admissions test.

A-LEVELS REQUIRED

Biology and either Chemistry, Physics or Maths

MINIMUM A-LEVEL GRADE REQUIREMENTS

A*AA (with the A* in a science or Maths)

COURSE DESCRIPTION

Biology at Oxford involves a comprehensive study of all living things and processes. It is an exciting and rapidly developing subject area with great relevance to addressing global challenges from disease and poverty to biodiversity loss and climate change. The study of living things has undergone tremendous expansion in recent years, and topics such as cell biology, developmental biology, evolutionary biology and ecology, all of which are covered in the course, are advancing at a great pace. This expansion has been accompanied by a blurring of the distinctions between disciplines: a biologist with an interest in tropical plants may well use many of the tools and techniques that are indispensable to a molecular geneticist. The degree starts off incredibly broad but there is the opportunity to specialise towards the end. Students can graduate after 3 years with a BA, or stay on for an extra year to do a masters, graduating with a MBiol degree.

STRUCTURE OF MODULES

1st year

3 compulsory themes: Diversity of life, How to build a phenotype, Ecology and evolution.
Compulsory skills training including a mini-project in the first term. A week-long field course in Wales in the summer term. Three written exam papers (assessing lecture material and research skills); assessed practical write-ups.

2nd year

Greater specialisation of themes (choose from): Genomes and molecular biology, Cell and developmental biology, Behaviour and physiology of organisms, Ecology and evolution.
Choose from a range of extended skills training courses, lasting for either one or two weeks. Two written exam papers; practical write-ups; coursework.

3rd year

Courses: Select a minimum of four of the eight options.
Regular skills training regardless of course choices. Three written exam papers (including a scientific paper critique); two pieces of coursework.

4th year (OPTIONAL MBiol)

In-depth research project under the supervision of an academic member of staff. Present work to peers at a mini-conference. Progression to the MBiol is contingent on satisfactory academic performance in the first three years.

APPROXIMATE NO. OF CONTACT HOURS PER WEEK

Tutorials: 3-4 hours
Lectures: 3-5 hours
Classes: 3-6 hours

WHY DID I CHOOSE BIOLOGY AT OXFORD?

Since year 10, I always thought I wanted to study medicine because I liked science and wanted to help people. Medicine seemed perfect for this and so I prepared accordingly, spending ages getting work experience, volunteering and attending preparatory interviews/admission tests talks and events. I didn't really mind Biology much at GCSE level, but once I started the A level in year 12, I absolutely fell in love with the subject. I still prepared for medicine though, ignoring warning signs such as not being able to articulate why I wanted to do medicine and not having any medicine related books to write about as all the books I read were biology related! Finally going on an ecology summer school at the end of year 12, standing waist deep in a rock pool and marvelling at a hermit crab I had found, made me realise I actually really love animals! Learning JUST about human biology when there was a whole world of living creatures out there just wouldn't cut it for me. I realised I wanted to learn about EVERYTHING and wasn't ready to specialise into human biology because there would be too many interesting things I'd be missing out on! I couldn't bear this thought and my teacher said, if you love biology so much why not just do a straight biology degree? And so I wrote a whole new personal statement, cancelled my UKCAT and made the best decision of my life to apply for biology. And it turns out, there's other ways to help people other than becoming a doctor because biology is AMAZING and has TONS of practical applications in literally everything! I absolutely love my degree now and was surprised by how interdisciplinary it was; within the first term we had not only done tons of biology but also dabbled in chemistry, physics and maths!

PERSONAL STATEMENT TIPS

- The most important thing to get across is your interest for biology and passion for the subject (without using the word passion). You can do this by referencing; books, articles, any trips/work experience you've had. Don't just say you've read/done something, elaborate on what specifically you found interesting and how you followed up on it e.g. if you read something interesting about photosynthesis in a book, maybe you went on to read a scientific paper about it to learn more and found out xyz. Why was this interesting?
- Also mention what skills you developed and gained from these experiences.
- The hobby/interests section does NOT have to be big; a few sentences is more than enough as Oxford personal statements often have a much a larger focus on academics.

INTERVIEW TIPS

- The point of the interview is to replicate a tutorial. The interviewer is checking how teachable you are, and whether you'll respond well to and suit this style of learning. Therefore, make sure you are engaged, receptive to feedback/ criticism and willing to be open-minded and approach a problem from different angles.
- Say your thought process out loud; this is what they want to know about - how you think.
- Speak your mind, no matter how dumb or simple it sounds.
- Ask them to repeat the question or reword it if it doesn't make sense.
- They don't care how much you know/what you know, but what you can do with new information and how you interpret it.
- You don't really need to revise specific things; just know the big themes and basic concepts in biology.
- For graph/data qs, a good place to start is describing the axes.

CAREER PROSPECTS

Personally, I'm planning to do a PhD after my degree and then get into biological research!
Other areas people go into include:

- Conservation
- Industry
- Finance
- Medicine
- Media
- Teaching
- Law

More information about careers people go into after Biology can be found here: https://www.ox.ac.uk/admissions/undergraduate/courses-listing/biology

STUDYING

A biology degree will consist of tutorials, lectures, lab sessions, computer sessions and synthesis sessions (in first year).The lectures essentially make up your curriculum and what you'll be examined on, and are the bulk of the degree. Lab sessions focus on developing practical skills such as conducting experiments, observations, collecting data, conducting dissections and often consists of the supervisor giving students handouts with instructions for the session beforehand and guiding them through it during the lab. Labs at degree level are much more independent and student -led (and also lots of fun!) compared to A levels; demonstrators will be around to help if needed but its mostly left up to you to complete the work. Computer sessions will focus on statistical analyses, coding in R and other important computer skills you'll need as a biologist. Synthesis sessions are conducted in small groups of 15 – 20 students and are much more interactive and activity based compared to lectures. Examples of the types of things I've done in synthesis sessions include debates, analyzing scientific papers, working through biological problems in a group and presentations. These are often designed to complement and further explore lecture content.

AVERAGE DAY/WEEK

A typical week (in 1st year) consists of eight 1hr lectures covering the three themes (Building a Phenotype, Diversity of Life, Ecology and Evolution), two 3 hour lab sessions, one 1hr synthesis session and one 1hr computer session. You will also have weekly tutorials which you will arrange with your tutor and usually have to hand in an essay 24 hours before. There tends to be one day where there is no departmental teaching – for us this was on Wednesday. The challenge with the degree is keeping on top of everything, i.e. making sure you're revising your lectures, attending all the sessions, doing your write-ups whilst also tackling an essay. Top tips: don't spend ages making lecture notes! And start your essays early!!! It can be very tempting to just focus on your essay and neglect the other work but the important thing to remember is that the departmental teaching (i.e. lectures, labs etc.) are what you'll actually be assessed on and are more important than essays. The purpose of tutorials and essays are to complement your lectures, or explore something new outside of the syllabus and develop both scientific skills such as critical thinking and also exam skills such as essay writing.

EXAMPLE TIMETABLE

Monday	Tuesday	Wednesday	Thursday	Friday
9am – 10am: Building a Phenotype lecture	9am – 10am: Ecology and Evolution lecture	No lectures or labs	9am – 10am: Diversity of Life lecture	9am – 10am: Diversity of Life lecture
2pm – 3pm: Diversity of Life lecture	10am – 1pm: Building a Phenotype lab session	Tutorial arranged with tutor at 4pm – 5pm (essay due 24hrs the day before)	10am – 1pm: Building a Phenotype lab session	10am – 11am: Synthesis session
	2pm – 3pm: Building a Phenotype lecture		2pm – 3pm: Ecology and Evolution lecture	12pm – 1pm: Computer session
				2pm – 3pm: Building a Phenotype lecture

Recommended Reading/Viewing

The Animal Kingdom: A Very Short Introduction, by Peter Holland:
A lovely, easy and comprehensive read about the biology of each group of animals and their evolutionary relationships. VERY useful for the compulsory Diversity of Life module (1/3 of first year) as Peter Holland is the head of the course and does most of the lectures! The content from the book is very similar to the lectures he does in first year and complements them beautifully.

Life Ascending: The Ten Great Inventions of Evolution, by Nick Lane
The book which made me fall in love with biology. Incredibly interesting take on the evolution of DNA, photosynthesis, warm blood, consciousness, death and other characteristics of life today. It's a logical read, with each chapter written as a narrative and backed up with tons of scientific evidence

Power, Sex, Suicide: Mitochondria and the Meaning of Life, by Nick Lane
Another one by Nick Lane, also one of my favorite books. Just to quote the blurb: "What gives us our energy? Why are there two sexes? Why do we grow old and die? How common is complex life in the universe? And what's behind the breath-taking exuberance of life on Earth today?" – Just some of the profound questions this book tackles, focusing on mitochondria – amazing structures powering our cells which were once free living bacteria! What I really like about Nick Lane's books is their logical, evidence-based nature and the way its written as a story, starting from the basics in each chapter and building up to an amazing conclusion by the end.

Subscribe to the **Nature Briefing** mailing list: sends you interesting science articles and news day. Link can be found here: **https://www.nature.com/briefing/signup/**
This was great for gaining an insight into the practical aspects of Biology and how it's applied in the real world as well as current topical issues in science. It also introduced me to lots of new ideas and concepts in Biology that you don't really get to learn at A-level.

Any **David Attenborough documentary** is a good form of research. It might not all be relevant but they're really interesting anyway.

ONE THING I WISH I KNEW WHEN I WAS APPLYING

Anyone can get in, and they're just looking for the best academic potential and curiosity.