

THE UNIVERSITY OF MANCHESTER

LIFE SCIENCES

www.manchester.ac.uk/lifesciences

THE FACTS

- One of the leading centres for life sciences research in the UK
- Over £150 million spent on new buildings and facilities for the discipline
- Placement year overseas in Europe, Asia, Africa, USA
- Student satisfaction rate of 92%
- Most targeted UK university by top graduate employers
- 4 million books in one of the UK's best university libraries
- Guaranteed accommodation for all first-years
- The UK's largest students' union





I have enjoyed every aspect of coming to Manchester.

Natasha Brewer Biology with Industrial/Professional Experience

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INTRODUCING MANCHESTER

OUR UNIVERSITY MAKING THINGS HAPPEN

Proud and ambitious, down-to-earth and friendly, we offer you a world-class learning experience that's rooted in a rich educational heritage at The University of Manchester. We focus on making things happen, turning enthusiasm into achievement and groundbreaking theory into cutting-edge practice.

Cutting-edge research and innovation feeds into our courses, while you'll find countless opportunities for extra-curricular activities and skills development. All this and more at the heart of Britain's most popular student city.

Learn more about us www.manchester.ac.uk/aboutus

OUR CITY ORIGINAL MODERN

Manchester is known as the 'original modern' city, thanks to both its industrial revolution heritage and an enduring progressive, can-do attitude, resulting in ideas that challenge convention, actions that change society, and attractions that capture the imagination.

We're proud to be part of the UK's most popular student city, which shakes up the music scene, nurtures cultural creativity, tantalises tastebuds, showcases international sporting achievements, encourages entrepreneurship, attracts big business, and entertains a sociable, multicultural community with warmth, wit and a lot of fun.

Discover Manchester from a student's perspective www.manchester.ac.uk/cityofmanchester



OUR STUDENTS AMBITIOUS AND PROACTIVE

University of Manchester students are a diverse and fascinating bunch, drawn from all corners of the globe, united in their goal to build a better future for themselves via a world-class educational experience of a lifetime.

Those who thrive best learn quickly how to balance the demands of a rigorous education with the attractions of a sociable student city, by enthusiastically making the most of the multitude of resources and opportunities we have to offer.

Meet some of our students, graduates and staff www.manchester.ac.uk/ug/profiles

YOUR EXPERIENCE MORE THAN A DEGREE

The world of higher education is changing. To achieve your fullest potential as a graduate, you now need more than a strong academic qualification.

That's why our student experience is geared towards giving you practical skills, personal development opportunities and a professional network of colleagues and friends that will set you up for success throughout your life.

Discover the Manchester experience www.manchester.ac.uk/ug/manchesterexperience

FIND OUT MORE

Access online or order a copy of our 2013 prospectus: www.manchester.ac.uk/ug/courses/prospectus

GET A HEAD START

Join our University of Manchester Aspiring Student Society: www.manchester.ac.uk/umass



LIFE SCIENCES AT MANCHESTER

A leading UK centre for life sciences research

Life sciences are an exciting and fast-moving area, so it is important that you undertake your first degree in an active, interdisciplinary research environment. Here at Manchester, we are addressing research challenges of global significance, including:

- Advancing the understanding of wound healing and tissue regeneration
- Exploring the cellular processes that lead to the development of cancer
- Developing environmentally sustainable biofuels to replace fossil fuels

Our curriculum is informed by our research, so you will learn cutting-edge science, taught by the very researchers who have made the discoveries. You also have the opportunity to make your own contribution to our research, if you choose to carry out a project in the laboratories of these leading scientists in your final year. Facilities are extensive and include state-of-the-art equipment and expertise in many areas of life sciences. We are ranked second in the UK for research power and 95% of our research is classified as being of international significance.

Our Faculty of Life Sciences has more than 1,000 people involved in research activities and we hold more than £100 million in research grants and contracts. Advanced research facilities encompass more than 28,000m2 of research space, including: the AV Hill building, a £39 million research facility for neuroscience and immunology; the Michael Smith Building, a £62 million research facility for molecular cell biology; the Manchester Interdisciplinary Biocentre, a £39 million centre that focuses on research at the interface between biology and the physical sciences; and the Core Technology Facility, a £27 million facility in which young businesses work alongside University research groups.

Our international reputation in research will directly benefit you as an undergraduate. You will leave us with a degree from a recognised major researchintensive university.

www.manchester.ac.uk/ls/research

Excellent teaching and facilities

We innovate in our teaching methods, pioneering the use of computer-based eLearning, and in student support, such as introducing the student-led PASS (Peer Assisted Study Scheme). In addition to traditional lectures, we conduct a significant amount of teaching in informal tutorials, seminars and laboratory sessions, so there are many opportunities for you to interact with staff and other students.

Outstanding teaching facilities include a dedicated eLearning team, leading-edge equipment and experimental techniques in our teaching laboratories, and anatomy facilities with a wide range of dissection, histology and computing resources and dedicated teaching staff.

You will have access to more than 200 PCs in our Life Sciences undergraduate teaching buildings and use of the £24m Alan Gilbert Learning Commons, which is due to open in the summer of 2012. With wireless access throughout, the Learning Commons will offer you a variety of flexible individual and group study facilities as well as providing access to computers, scanning and printing facilities.

The quality of our teaching and resources is reflected by a mean student satisfaction rate of 92% in the 2011 National Student Survey across all our Life Sciences courses, which is well above the national average student satisfaction rate of 83%.

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I have enjoyed every aspect of coming to Manchester. It is great to be able to study something which I am genuinely interested in and from people who are genuinely interested in what they are teaching me.

Natasha Brewer Biology with Industrial/ Professional Experience

Breadth and flexibility of courses

We currently offer more than 100 different course units in life sciences, including lecture, practical and field units. The breadth of our research affords us expertise in a range of areas, from molecules to cells, plants to animals, and biomedical to population studies. If your interests also include subjects outside the life sciences, you can choose optional units in other subjects such as languages or law.

The first year of all our degree courses share a common core of course units introducing fundamental concepts. This allows you to transfer between most degree courses at the end of your first year and, in some cases, later.

The best feature of studying this degree at Manchester is the ability to refine my degree to my interests over the three years – I've enjoyed a wide range of optional course units, from genetics to proteins to immunology.

Ben Grimshaw Medical Biochemistry

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My presentation skills were honed whilst working as a student ambassador, presenting to 300 applicants fortnightly about the city. Now in my day-to-day job I am able to put myself forward and present confidently which has helped boost my profile in the company. The company is expanding into the developing markets at the moment, and with my international mobility and experiences it looks like I might be getting posted to India for a couple of years!

Fran Barker

Biochemistry with Industrial/Professional Experience (2010 graduate)

Now Research and Development Assistant, Reckitt Benckiser

Employability

A research-focused curriculum – including 'Frontiers of Science' lectures and seminars, a comprehensive training programme in laboratory skills, experimental design and academic writing, and the opportunity to undertake a research project in our research labs – ensures that you will be equipped for a successful career in research at PhD level and beyond.

You will also have many opportunities for science careers outside of the laboratory in science enterprise, education and communication, while a proportion of our graduates chose careers completely unrelated to science.

We therefore ensure that our graduates develop the abilities and characteristics that are required not just in research, but also in the wider jobs market. You will develop a range of transferable skills through specially developed activities in your tutorials and we provide a convenient online tracking tool to help you build a 'living CV' to record your skills as you progress through the course.

Importantly, we also provide a wealth of opportunities for you to do extra things that will make you stand out from the crowd when applying for graduate jobs. These include year-long placements with our partner organisations in the UK and abroad, summer placements in our research labs, and roles assisting our Faculty with recruitment and student support. The skills you will gain by taking advantage of these opportunities are invaluable and many of our graduates attribute their success in the jobs market to their experience in these roles.

Play an active role in the Faculty

When you join our Faculty, you will become part of a dynamic scientific and educational community. Because of our favourable ratio of staff to students, we provide a friendly and informal atmosphere in which undergraduate students are encouraged to play an active role in the life of the Faculty.

We will seek your views on your course at all stages. We use your feedback to continually improve the student experience – for example, we have recently implemented a number of new initiatives, including second- and final-year student discussion groups, and moving some final-year exams from June to January.

Find out more...

This brochure really can only give you a flavour of the facilities and undergraduate courses on offer. You can find more information on our website: www.manchester.ac.uk/lifesciences

If you would like to visit our Faculty before applying and talk to our current students and staff, please contact us in the undergraduate admissions office (see back page for contact details). We will be happy to tell you when our next open day is scheduled, or to organise a personal tour at a convenient time for you.

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One of the things I found really interesting this year was the lectures from researchers on genetic analysis, which were based on what they were researching in their own labs. This gave me an insight into the research that is happening in the University and the type of thing I might be doing if I were to go on and work in a lab in the future.

Emma Miles Genetics



COURSE LIST

Three-year degrees and degrees with a Year in Industry:

Anatomical Sciences BSc 3yrs UCAS Code B110

Anatomical Sciences with Industrial/ Professional Experience BSc 4yrs UCAS Code B111

Biochemistry BSc 3yrs UCAS Code C700

Biochemistry with Industrial/ Professional Experience BSc 4yrs UCAS Code C701

Biology BSc 3yrs UCAS Code C100

Biology with Industrial/ Professional Experience BSc 4yrs UCAS Code C101

Biology with Science and Society BSc 3yrs UCAS Code C1V3

Biology with Science and Society with Industrial/Professional Experience BSc 4yrs UCAS Code C1L3

Biomedical Sciences BSc 3yrs UCAS Code B940 Biomedical Sciences with Industrial/ Professional Experience BSc 4yrs UCAS Code B941

Biotechnology BSc 3yrs UCAS Code C560

Biotechnology with Industrial/Professional Experience BSc 4yrs UCAS Code C561

Cell Biology BSc 3yrs UCAS Code C130

Cell Biology with Industrial/ Professional Experience BSc 4yrs UCAS Code C131

Developmental Biology BSc 3yrs UCAS Code C141

Developmental Biology with Industrial/Professional Experience BSc 4yrs UCAS Code C143

Genetics BSc 3yrs UCAS Code C400

Genetics with Industrial/ Professional Experience BSc 4yrs UCAS Code C401



Life Sciences BSc 3yrs UCAS Code C102

Life Sciences with Industrial/ Professional Experience BSc 4yrs UCAS Code C105

Medical Biochemistry BSc 3yrs UCAS Code C724

Medical Biochemistry with Industrial/Professional Experience BSc 4yrs UCAS Code C741

Microbiology BSc 3yrs UCAS Code C500

Microbiology with Industrial/ Professional Experience BSc 4yrs UCAS Code C501

Molecular Biology BSc 3yrs UCAS Code C720

Molecular Biology with Industrial/ Professional Experience BSc 4yrs UCAS Code C702

Neuroscience BSc 3yrs UCAS Code B140

Neuroscience with Industrial/ Professional Experience BSc 4yrs UCAS Code B143

Pharmacology BSc 3yrs UCAS Code B210

Pharmacology with Industrial/ Professional Experience BSc 4yrs UCAS Code B211

Pharmacology and Physiology BSc 3yrs UCAS Code BB12

Pharmacology and Physiology with Industrial/ Professional Experience BSc 4yrs UCAS Code BBC2

Physiology BSc 3yrs UCAS Code B120

Physiology with Industrial/ Professional Experience BSc 4yrs UCAS Code B121

Plant Science BSc 3yrs UCAS Code C200

Plant Science with Industrial/ Professional Experience BSc 4yrs UCAS Code C202

Zoology BSc 3yrs UCAS Code C300

Zoology with Industrial/Professional Experience BSc 4yrs UCAS Code C301

Cognitive Neuroscience and MNeuroSci degrees

Cognitive Neuroscience and Psychology BSc 3yrs UCAS Code BC18

Cognitive Neuroscience and Psychology with Industrial/ Professional Experience BSc 4yrs UCAS Code BCC8

Neuroscience MNeuroSci 4yrs UCAS Code B141

Degrees with a Modern Language

Anatomical Sciences with a Modern Language BSc 4yrs UCAS Code B114

Biochemistry with a Modern Language BSc 4yrs UCAS Code C705

Biology with a Modern Language BSc 4yrs UCAS Code C106

Biomedical Sciences with a Modern Language BSc 4yrs UCAS Code B9R9

Cell Biology with a Modern Language BSc 4yrs UCAS Code C132

Developmental Biology with a Modern Language BSc 4yrs UCAS Code C1R9

Genetics with a Modern Language BSc 4yrs UCAS Code C402

Life Sciences with a Modern Language BSc 4yrs UCAS Code C103

Microbiology with a Modern Language BSc 4yrs UCAS Code C502

Molecular Biology with a Modern Language BSc 4yrs UCAS Code C722

Neuroscience with a Modern Language BSc 4yrs UCAS Code B144

Pharmacology with a Modern Language BSc 4yrs UCAS Code B212

Physiology with a Modern Language BSc 4yrs UCAS Code B122

Plant Science with a Modern Language BSc 4yrs UCAS Code C201

Zoology with a Modern Language BSc 4yrs UCAS Code C303

ALL COURSES

Teaching and learning

Choice and flexibility are the hallmarks of our courses. We recognise that your interest in particular aspects of bioscience may develop only when you are more familiar with subjects at university level. Our degree courses in Life Sciences, Biology and Biomedical Sciences in particular give you the chance to change to virtually any other at the end of your first year. As well as changing degree courses, you can also opt on, or off, the placement year.

Our degree courses are modular and composed of a number of units, each of which has the same credit rating. This provides flexibility and allows students on different courses to select different combinations of non-core options. You have a wide range of optional units to choose from so that you can follow your interests. These can be Life Sciences units or – timetable permitting – units from any other Faculty in the University. Popular choices include Law, Chemistry and Languages.

All our degree courses use a variety of teaching methods, including:

Tutorials

Tutorials are hour-long sessions that you undertake each week with your personal adviser and a small group of students. They give you the opportunity to get to know your personal adviser and your tutor group, while exploring interesting and topical aspects related to your degree discipline. Activities include discussions, presentations, community projects and group work, which help to hone your transferable skills, such as oral and written communication, problem-solving, time management and teamwork. These skills will contribute enormously to your future employability.

Lectures

Lectures are held in lecture theatres over the campus and the audience can vary from 20 to 500 students. Most lectures use the latest technologies to present material in the most effective way, and most have associated eLearning modules to enhance your learning and consolidate your understanding.

eLearning

eLearning is primarily delivered through the University's virtual learning environment, which provides learning resources on demand when you need them. These resources include lecture notes, movies, animations, discussion boards, live classrooms, assessments, quizzes, practice problem sets, lecture podcasts and many other activities to assist your studies. You complete a series of nodes for each unit, and within each node is a set of tasks and assessments. This has proved very effective in supporting and encouraging students in independent learning, and ensures that you keep up with the lecture and practical based material.

Data-handling and critical writing skills

The ability to understand and manipulate scientific data and literature are key skills for any life scientist. You will learn these skills at your own pace through a series of activities in our online learning environment.

Practicals

Practicals are designed not only to complement your lectures, but also to improve your problem-solving abilities. Depending on your degree course, you will undertake between three and nine hours of practical work per week, carrying out supervised experiments in small groups in our well-equipped teaching labs. In your first and second years, you will develop your laboratory skills and become familiar with the latest experimental techniques in preparation for an independent project in your final year.

Laboratory coursework marks accrue from practical exercises, experiments and reports.

Fieldwork

Some of the units that prove most popular with our students are the field courses. Courses are currently held in several European locations, South Africa, and South and Central America. They offer you the chance to study organisms in a range of environments, from marine to freshwater, temperate to tropical.

Field courses last from one to three weeks and take place in the Easter or summer holidays. The close collaboration between staff and students and the focused nature of these courses offers a rare chance for immersion in a specialist area of field study. You will undertake directed work and independent research projects to develop important skills,



including observation, experimental design, data collection and project management. Field courses are assessed via oral and written presentations, group work and projects.

You can find more information on our website:

http://bit.ly/Jh3CoN

or

www.manchester.ac.uk/ls/undergraduate/cours es/modules/fieldcourses

Final-year projects

One of the most exciting parts of all final-year courses is the opportunity for you to carry out an independent in-depth research project. This may be a laboratory- or field-based experimental study, or may involve aspects of the public understanding of science, including education projects (many of which involve close collaboration with local schools). Alternatively, you may be interested in working on a group based enterprise project, designing an eLearning tool, or a website, or doing in-depth bioinformatics, or meta-analysis, according to your preference and future career path.

You can find more information on our website:

http://bit.ly/s6YzL8

or

www.manchester.ac.uk/ls/undergraduate/cours es/modules/finalyearprojects

TYPICAL YEAR 1 TIMETABLE

You will have around 15 to 20 hours of contact time per week and will be expected to spend at least the same amount of time on private study.

	Monday	Tuesday	Wednesday	Thursday	Friday
9am – 10am			Lecture	Lecture	
10am – 11am	Lecture	Lecture		Lecture	Lecture
11am – 12noon	Tutorial	PASS session	Lecture		Lecture
12noon – 1pm				Data Handling Clinic	
1pm – 2pm	Frontiers of Science Lecture	Practical	No scheduled teaching		Lecture
2pm – 3pm		Practical	No scheduled teaching		
3pm – 4pm		Practical	No scheduled	teaching	
4pm – 5pm	Lecture		No scheduled teaching*		

*All students are encouraged to participate in one or more of the wealth of extracurricular activities on offer from the Athletic and/or Students' Union, and inter-University sporting events are focussed on Wednesday afternoons

WHO TEACHES YOU?

You will be taught by specialist academic staff. We have over 200 members of academic staff involved in teaching. Most are actively undertaking research (principal investigators), while some have chosen to specialise in teaching and learning at HE level (teaching fellows). Our highest profile researchers contribute particularly to final-year lecture units and projects. Postgraduates assist as demonstrators in practicals and on field trips, but an academic supervisor is always present.

Assessment

You will complete 120 credits per year, with one credit equal to 10 hours of study. Course units are usually 10 credits, but sometimes 20 or 30.

Assessment type will vary according to the type of unit you are undertaking, eg lecture unit, practical, project or field course. You are likely to be assessed using several of the following methods:

- Multiple choice and essay-style examinations
- Coursework essays
- Oral presentations
- Online discussion groups
- Online multiple choice questions
- Laboratory-based exercises
- Reports written in the style of scientific research papers
- Debates
- Discussions in seminars

For a complete year-by-year guide, see:

http://bit.ly/HQzLka

www.manchester.ac.uk/ls/undergraduate/ teachingandlearning



Student support

To support you through your time with us, we have several levels of support in our Faculty:

- Personal advisor a member of the Faculty's academic staff who monitors your welfare throughout your time here
- Student Support office a one-stop-shop for any questions about your course or pastoral matters
- Peer Assisted Study Scheme a student-led scheme where second and final-year students support first-years with academic and pastoral matters

The University also has a range of support networks to ensure your wellbeing.

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I think the PASS sessions are great in the first semester to help first years to settle in. The aspect of being able to ask questions about the lecture material without feeling self-conscious about putting your hand up in a huge lecture theatre is great, and the layout of small groups is similar to the college class format, so I think it helps with the transition to university.

Catherine Eagle Pharmacology with Industrial/ Professional Experience

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There is great support available should you need it, be it from tutors, academic advisors, programme directors, or the placement team; you never feel like you are lost and you always feel you can approach anyone with any questions.

Tom Bemand Medical Biochemistry with Industrial/Professional Experience



WHAT YOU STUDY

Degrees with industrial/ professional experience

Spend a year, between your second and final year, on a placement with one of our partner organisations in the UK or overseas. Placements provide valuable work experience that will help you clarify your career objectives and give you an advantage in today's competitive employment market.

We have a very successful programme of laboratory and field research placements with more than 200 partner organisations all over the world, including pharmaceutical companies, research institutes, hospitals and nature reserves. Last year, 54% of our placement students worked in organisations in the UK (eg AstraZeneca, Pfizer, GlaxoSmithKline, Unilever, Royal Botanic Gardens, Paterson Institute for Cancer Research, Macaulay Land Use Research Institute). Students placed outside the UK have recently gone to France, Germany, Austria, Canada, USA, South Africa, the Gambia and China.

We have recently expanded our range of placements to reflect the growing range of science careers outside of the laboratory in science enterprise, education and communication.

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My placement was at the Sloth Sanctuary of Costa Rica, which is essentially a small, family-run centre dedicated to the rescue, rehabilitation and release of the two species of sloth found out in Costa Rica... I think it's probably fair to say that this placement has completely changed and made my future career plans! If all goes to plan, I hope to start my PhD back out at the sanctuary after I graduate, furthering the work onto wild sloths. I want to find out everything we can about their natural activity and behaviours, particularly their diet and ranging patterns. There is so much we still need to know about them, it's more than a career's worth!

Becky Cliffe Zoology with Industrial/ Professional Experience You can choose from:

With industrial/professional research experience: You undertake a research project, usually in an industrial or international research organisation. This provides a fantastic opportunity to undertake significant 'real-world' research and decide whether a research career is for you.

With education: You take placements in two different educational environments. You will gain experience of teaching and learning in different age groups and environments, preparing you for a career in a range of education sectors, as well as providing you with transferable skills you can use in other fields.

With enterprise: You can take advantage of Manchester's thriving biotechnology industry by spending a year working in a biotechnology start-up or technology transfer company. You will gain valuable skills, experience and contacts that will benefit you if you are interested in a career in the growing industry of biotechnology, or would like to set up your own enterprise after graduating.

With science communication: You spend a year working in an organisation that communicates science, such as the media office of a university, a medical writing company, or a museum. If your interests lie outside the lab, there is a range of interesting careers communicating science. The experience you gain will give you a head start when applying for jobs in this sector.

"

My industrial placement was based in target validation for AstraZeneca. During my year I used a variety of standard techniques, such as PCR and western blot. and some more specialist techniques, including metabolomics, to characterise the dependence of cancer cells on a metabolic pathway. Other than technical experience, I also developed valuable data analysis and presenting skills. I was fortunate to be awarded the AstraZeneca Quarterly Scientific Innovation Award based on my project work, and have forged good relationships with colleagues. During my year in industry, it was apparent that a degree in biochemistry can lead to careers in most departments. The addition of industrial experience significantly increases employability and enhances PhD applications.

Cheryl Petit Biochemistry with Industrial/ Professional Experience

You can find out more online:

http://bit.ly/J3f4XS or www.manchester.ac.uk/ls/undergraduate/courses/industrialexperience

DEGREES WITH A LANGUAGE

If you have a passion for bioscience, enjoy learning foreign languages and experiencing new cultures, this is a perfect degree for you. All of our Single Honours degrees are available as a four-year course incorporating a modern language. We currently offer the following languages: French, German, Italian, Japanese, Mandarin, and Spanish.

You will spend approximately two-thirds of your time studying Life Science units, with the remainder of your time spent studying your chosen language. In addition, there are some associated cultural units available to study alongside most of our "with Language" degrees.

The third year of these degrees, subject to satisfactory academic performance and placement availability, is spent conducting research in a research institute or university in a country where the language you are studying is spoken. Your linguistic ability will markedly improve through both your taught units and your placement year. Living and working abroad, you will broaden your horizons and develop a diverse friendship group originating from across the world.

"

I've always known that I wanted to do a science-related degree, but didn't like the idea of simply dropping and forgetting Spanish after A-level. The 'with a modern language' option provided therefore suited me immensely. This also enabled me to spend a year on placement in a lab based within the pharmacology department of a university in Spain. As well as becoming more comfortable with the various techniques used in a lab environment, this experience has confirmed that I would like to do a PhD once I graduate. The placement year is a great CV enhancer, as experience is key nowadays due to such a competitive job market, as well as giving a great insight into the life and work of a research scientist. I was also lucky enough to spend my year in Barcelona, allowing me to practice and greatly improve on my Spanish – whilst living in a beautiful sunny city with a beach!

Siobhan Ahern

Pharmacology with a Modern Language

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"I went to Tsukuba University in Ibaraki, Japan, for my placement year. The highlight of my year was definitely the people that I met. I was lucky in that everyone in my lab were all very helpful people, all of whom were great to work with and fun to be around. I was also lucky enough to have met a lot of good friends on the university judo team, many of whom I have still maintained contact with even after having left Japan. I think that going abroad and being entirely independent and having to rely on yourself to figure out even the most basic aspects of daily life in a foreign country was an incredibly exciting and challenging experience. Not only this, but I think that learning what 'real research' is like is also very important for any science student. In first and second-year labs, there is just no comparison to what it is actually like in a real-world setting.

Michael Harris Genetics with a Modern Language

STUDY ABROAD

Students on most of our courses have the opportunity to study abroad for either semester of their second year. This is an excellent opportunity to travel and to gain a fresh perspective on your course through the experience of a different academic system.

We offer opportunities to study abroad throughout Europe, in the USA, Canada, Australia and the Far East. Foreign language skills are not essential for study in Europe, as many of our partners (particularly those in the Netherlands and Sweden) lecture in English.

Participating in our Study Abroad programme will broaden your horizons, enhance your personal development and can dramatically improve your career prospects. You're likely to come back a more mature, focused and confident individual.

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Studying abroad at the University of Queensland is an incredible and unforgettable experience. I was given the opportunity to study coral reefs and Australian biodiversity, complete fieldwork in deserts, tropical rainforests and the Great Barrier Reef, while every so often kicking back and enjoying the sun!

Michael Natt Zoology

You can find out more online:

http://bit.ly/J3gnGr or www.manchester.ac.uk/ls/undergraduate/courses/studyabroad

COURSE SUMMARIES

What follows is a brief summary of the content and flavour of each of our courses. More detailed accounts can be found on the UCAS website.

While we can be reasonably sure of the content and format of the first year, the biosciences are such fastmoving subjects that it would be unwise for us to give too much information about the detailed content of our units in the second or final year. For an idea of the types of units that will be offered, please visit our Faculty website, which has details of all the units on offer:

www.manchester.ac.uk/lifesciences

ANATOMICAL SCIENCES

Anatomical Sciences with Industrial/Professional Experience

Anatomical Sciences with a Modern Language

Anatomy is the science that studies the structure and the form of different organisms, including humans, and the relationships of their parts. You will study structure – from the whole human body, to the tissue, cellular and sub-cellular level – and relate structure to function in the adult and during embryonic development. The anatomy of other species is also considered.

The understanding of anatomy and the different anatomical systems – such as the skeletal, muscular, cardiovascular and nervous systems – and of components – such as muscle cells and neurons – has major repercussions in modern medicine, pathology and in the comprehension of human evolution.

Your theoretical study is underpinned by practical experience, where you can take advantage of our exceptional dissecting room facilities to carry out dissection, histology, cytology and morphometry.

"

I have really enjoyed the hands-on approach that The University of Manchester offers. From the first week, I was actively involved in experiments and working with the cadavers in the dissection room. This makes understanding the theory from lectures far easier. The access to the cadavers means that we can see the anatomy we have learnt first-hand, making it far easier to build an accurate mental image of what certain joints and limbs look like.

Alex Evans Anatomical Sciences

BIOCHEMISTRY

Biochemistry with Industrial/ Professional Experience

Biochemistry with a Modern Language

Have you ever wondered about the basic chemistry of life? Biochemistry is the chemistry of the substances and processes occurring in living cells and tissues. This subject forms the basis of virtually all of the life sciences, and many exciting discoveries made in this area have contributed to our understanding of life, the solving of medical problems, and to the discovery and production of safe and effective drugs.

Our course at Manchester is broad in scope, with topics including: the structure of biomolecules, and how they interact in essential processes and pathways in our cells; the actions of enzymes, and how they can be inhibited by drugs; and genetic engineering and molecular biology.

Students who have performed well on this course have recently undertaken placements at GlaxoSmithKline, the Medical Research Council in the Gambia and several research institutes in the USA.

"

The opportunity to do units associated with both biology and chemistry prepares you for a broad range of career paths, and provides you with a firm grounding for work within a fast-paced research environment after graduating. The course overlaps with a broad range of courses from Life Sciences, but also carries very specific units for biochemists. Biochemistry labs in the second year were an excellent basis for my industrial placement. Most techniques carried out in my placement lab had been introduced to me in my second-year practical units.

Hannah Painter Biochemistry with Industrial/ Professional Experience

BIOLOGY

Biology with Industrial/ Professional Experience

Biology with a Modern Language

Biology – the study of living organisms – is a wide-ranging topic in which you may have many potential areas of interest. These courses will suit you if you want a broad biological course while avoiding early specialisation.

You can keep your options open and cover a wide range of areas; or you have the flexibility, when you identify areas that interest and hopefully excite you, to focus on particular biological topics. You can benefit from a wide spectrum of training in the life sciences from staff who are specialists in their chosen subject areas. Many biology students report that field courses were their favourite units; these take place in locations in the UK and abroad, chosen for the richness and interest of their flora and fauna.

"

The flexibility in Biology is what appealed to me most – there is a great deal of choice concerning units and practicals, and the broad life science background it provides opens you up to many fields in life sciences that you might not be otherwise exposed to on a more specialised degree programme. The best part of my first year by far was the South Africa field course in animal behaviour. It was challenging as well as being fun, and a great chance to gain experience outside the lab.

Branwen Messamah Biology with Industrial/ Professional Experience

BIOLOGY WITH SCIENCE AND SOCIETY

Biology with Science and Society with

Industrial/Professional Experience

Do you want to see the life sciences as part of society? This course is designed for students who want a broad biological course, but who also wish to set the biosciences in their contemporary social context. It offers you a wide range of training from staff at our world-renowned Centre for the History of Science, Technology and Medicine.

Specialist areas of staff include the critical history and social implications of genetics, evolutionary theory, biomedical sciences and modern medical practice.

You will explore the changing social, ethical and political dimension of life sciences, while also developing research, writing and communication skills. If you like science, but you also like humanities and social studies, this is the course for you.

Both our science media projects, where you produce portfolio of communication materials that could include a scientific article or a podcast, and our science communication placements, where you could spend a year working in an organisation that communicates science (such as a medical writing company or a museum), provide a wealth of opportunities for you to stand out from other graduates in this field.

This course provides an excellent basis for non-laboratory-based science careers, such as museum work, the media, or science policy work.

"

The staff in the History of Science, Technology and Medicine Centre are so approachable. If you are having trouble with an essay, or don't understand a lecture, you can pretty much ask anyone and they are eager to help you.

Gemma Reed Biology with Science and Society

BIOMEDICAL SCIENCES

Biomedical Sciences with Industrial/Professional Experience

Biomedical Sciences with a Modern Language

Biomedical science is the application of biology-based science to medical use, be it research, health monitoring, or treatment. Improvements in healthcare continue to be driven by dramatic advances in the basic biosciences. These degree courses offer you a broad, up-to-date training in a wide range of medically related disciplines, including physiology, pharmacology, neuroscience, cell biology, microbiology, anatomy and histology, genetics, biochemistry, immunology and more.

The courses offer you flexibility and have a strong practical component, providing a sound basis for a career at the forefront of medical research. Other attractive careers exist in the pharmaceutical industry, in laboratories and organisations linked with the health services, and in journalism. Above all, Biomedical Sciences is aimed at people who want to make a fundamental contribution to the current revolution in medical science.

We have chosen not to have our degree accredited by the Institute of Biomedical Science, in order to allow you maximum flexibility in your choice of course units. If you are interested in a career as a biomedical/healthcare scientist in the NHS, you can undertake the NHS Scientist Training Programme after you have completed our Biomedical Sciences degree.

"

Biomedical science at most is flexible and reflects the broad range of fields underpinning modern medicine. I have enjoyed feeling in control and empowered to make my own choices when it comes to lectures and labs. I enjoy the anatomy lectures and practicals, which allowed us to work within the dissecting rooms using the cadavers. This not only increased my passion for medical science, but also drove me to work harder. For those interested in other areas of science, a degree in Biomedical Sciences from Manchester allows students to pick and choose from a wide variety of units.

Moses Chidowe Biomedical Sciences

BIOTECHNOLOGY

Biotechnology with Industrial/ Professional Experience

The exploitation of biological systems has had a major commercial impact over the last decade.

Biotechnology will continue to grow in the post-genomic era, in areas ranging from drug discovery, to stem cell research and genetic engineering. As well as explaining the science behind biotechnology, this course also explains how new start-up biotechnology companies are created, how to explore the market potential of products and processes, how to create business plans and how money is raised from venture capitalists.

Our inclusion of group enterprise projects, which involve close collaboration with entrepreneurs, and an enterprise placement, where you could work for a year in a biotechnology start-up or technology transfer company, provide a wealth of opportunities for you to stand out from other graduates.

Our courses are designed to produce graduates who will have a solid understanding of science, technology and business management, along with the entrepreneurial skills required to exploit technological advances within a competitive environment. This blend of skills will be invaluable to future employers, and provides a springboard for the budding biotechnology entrepreneurs of the future.

"

Our lab units are very helpful and stimulating. We have to design our own experiments instead of just following the lab manual. My course also has some interesting entrepreneurial units and my favourite assignment so far has been creating an invention and acting as an entrepreneur, presenting it to a small audience.

Nida Asnida Baharin Md Daud Biotechnology

CELL BIOLOGY

Cell Biology with Industrial/ Professional Experience

Cell Biology with a Modern Language

Cell biologists want to understand how the cells do what they need to do, working from molecules, through whole cells, up to tissues and organs. Cell biology integrates other life sciences, such as biochemistry and molecular biology, to explain the structure and function of cells. It also considers how cell diversity arises and how cells co-operate and communicate with each other in normal tissues and in developing embryos.

Cell biology is one of the major growth areas of life sciences in the post-genomic era and uses new technologies, including cell culture, manipulation of genes, monoclonal antibodies and advanced light and electron microscopy. These developments support the existing and future needs of society in many areas of medicine, including cancer research, the control of autoimmune disease, and the study of birth defects; and in other fields, such as plant biotechnology and environmental monitoring.

"

I most enjoy getting hands-on experience in the lab. I have just finished a summer placement at the University and am looking forward to my third-year project. The course at Manchester stands out because you are offered a wet-lab project, enabling you to get real lab experience before graduating.

Helen Fox Cell Biology

COGNITIVE NEUROSCIENCE AND PSYCHOLOGY

Cognitive Neuroscience and Psychology with Industrial or Professional Experience

One of the most challenging problems in modern biology is to understand the behaviour of both animals and humans in terms of brain mechanisms and evolutionary principles. Approaches to this problem are diverse, varying from the study of biological systems at the molecular level, to analysis of human performance. By combining studies of major topics in experimental psychology and neuroscience, this course provides a broad background in this exciting field of behavioural science.

The psychology component covers topics such as: how humans and animals think (cognitive processes); how the world is sensed (perception); comparative and developmental studies; and abnormal psychology. The neuroscience component of the course covers topics such as animal behaviour, learning and memory, the action of drugs on the nervous system, and how humans and animals sense and respond to their environment.

Our degree is accredited by the British Psychological Society (BPS), which means as well as providing a solid foundation for a career in the life sciences, it also constitutes your first step towards professional chartered psychologist status.

"

My course allows me the rare opportunity to appreciate abstract scientific concepts on real-life and visible levels. I am looking forward to undertaking research projects in my second and final years, not only for the chance to focus on the areas of neuroscience and psychology that have most interested me so far, but also to help me in deciding where next to steer my postgraduate education.

Zahra Khatib Cognitive Neuroscience and Psychology

DEVELOPMENTAL BIOLOGY

Developmental Biology with Industrial/Professional Experience

Developmental Biology with a Modern Language

Developmental biology explains how the single cell formed at fertilisation forms an embryo and then a fully formed adult organism. For this to happen, the fertilised egg must grow and divide to produce the many cells within the adult organism; different types of cells (such as nerves, muscles and skin) must be produced; these cells must be arranged together to form the organs of the body; and these organs must be positioned appropriately in the body. Altogether, these ensure, for example, that hands form at the ends of arms, not leas, and flowers on stems, rather than roots.

Our understanding of developmental biology is having a significant impact on our understanding of evolution and modern medicine, including treatment of birth defects, infertility and cancer in humans. Of particular interest is the use of stem cells to engineer replacement tissues and organs, which could revolutionise medicine.

Developmental biology is a multidisciplinary field that integrates genetics, molecular biology, biochemistry, cell biology, anatomy, physiology and computer modelling. Consequently, if you choose this course, you will gain research-driven knowledge and experience in a broad range of biological subjects, from the molecular functions of individual genes and proteins, to the structure and function of whole organs.

"

Being a student on one of the smaller courses in Life Sciences is great. There are only ten students in my year, so we have all become really close friends. In addition to this, as a small group we are able to have regular discussions with our course director, so we can keep updated with any changes that are to be made to the course, ask for advice when needed and give our opinion on course units.

Jenaid Rees Developmental Biology

GENETICS

Genetics with Industrial/ Professional Experience

Genetics with a Modern Language

Genetics is of fundamental importance to all branches of modern biology, from evolutionary biology to medicine, and extends into many practical areas, such as biotechnology and agriculture. You will discover the principles of heredity and evolution and learn how we can map genes, and understand their function.

You will consider how the development of multicellular organisms can progress from a single cell through regulated courses of gene expression, and learn the detailed mechanisms by which genes can be switched on and off. You will understand how model organisms, such as the fruit fly and the mouse, are of enormous biomedical importance, and learn how our genetic make-up can predispose us to different diseases.

The human genome project has provided us with the sequence of the entire human genome and identified around 25,000 human genes. The challenge now is to understand the function of all these genes, determine how they cooperate to make us who we are, and to learn how we can best use this knowledge to improve human society. More recently, the advent of low-cost next-generation DNA-sequencing technologies will provide a wealth of genetic information for many different organisms and many different people.

Genetics will therefore play a key role in deciphering and utilising this wealth of information in the future.

"

Although genetics is a rather specific field of study, one in which new discoveries are being made all the time, it affords the opportunity to branch out into a variety of different fields. For example, with genetics you are not limited to just working in a lab, as there are plenty of opportunities for field research. As well as this, there are seeminaly infinite different fields of genetics to branch into, from the genetic aspects of disease, to evolution of different genes over time, or even areas as far-reaching as the specificity of the language you speak based on your genetic heritage. No matter where your interests lie, there is definitely something for everyone in genetics.

Michael Harris Genetics with a Modern Language



LIFE SCIENCES

Life Sciences with Industrial/ Professional Experience

Life Sciences with a Modern Language

If you are committed to biosciences, but have not yet decided on the area in which you would like to specialise, this course will help you to make the decision at the end of your first year from a position of greater knowledge. The combination of units taken in the first year enables you to transfer to almost any of the degree courses within our Faculty of Life Sciences. Your individual study course will be carefully planned with advice from your advisors.

MEDICAL BIOCHEMISTRY

Medical Biochemistry with Industrial/Professional Experience

These courses are designed for biochemists considering a career in research into the biochemical basis of disease and therapeutic medicine. After graduation, you could be involved in the work to develop new drugs targeted against specific enzymes, hormone receptors, or other biologically important molecules.

Medical biochemistry addresses the functioning of normal and diseased organisms from a biochemical point of view. Our courses will provide you with a fundamental grounding in the principles of biochemistry, such as protein structure and function.

As you progress, optional course units may show you how biochemistry allows us to understand and treat diseases. Subject areas include the molecular biology of cancer, cell cycle control and genetic diseases.

"

Medical Biochemistry is quite a small course, which is nice, as it's a really tight-knit group and everyone is friendly with one another. Going into my third year, I can tell you that the choice of units we get is astounding. These units all tend to have some sort of applicability towards a clinical setting and allow you to get a degree that is really finely honed in a certain field of biology.

"I've particularly enjoyed the cell biology course units, as they showed how ridiculously clever living organisms are. They also provided an insight into some of the ways in which they can go wrong. I'm looking forward to taking the Molecular Biology of Cancer lecture unit, as I wrote my dissertation on this subject and found it interesting. I never thought I'd be able to enjoy writing a ten-page essay!

Dom Trewartha Medical Biochemistry

MICROBIOLOGY

Microbiology with Industrial/ Professional Experience

Microbiology with a Modern Language

Microbiology is a broad discipline that involves the study of the biology of bacteria, viruses, protozoa and fungi. The main focus of our course is the pathogenic potential of the organisms that cause disease in man; also covered are aspects of the biochemistry, physiology and genetics of microorganisms.

Recently, our knowledge of how microbes function has expanded enormously, both in the disease process and at molecular level. Genetic engineers are using bacteria and viruses to clone eukaryotic genes to study and treat human genetic disorders. Vaccines are being developed for diseases such as AIDS, Legionnaire's disease and listeriosis. In the areas of biotechnology, agriculture and food production, microbes are continually exploited for the benefit of man.

Microbiologists are needed to do the research required for the future battle against diseases worldwide and in order to exploit microbes in the production of food.

"

I changed courses to Microbiology at the start of my second year and made the perfect choice. The University's facilities are excellent and the enthusiasm and support from staff are second-to-none. I am starting my lab research project this year and I am really looking forward to working with some top researchers in my field.

Cate Winstanley Microbiology

MOLECULAR BIOLOGY

Molecular Biology with Industrial/Professional Experience

Molecular Biology with a Modern Language

Molecular biology underpins much of today's biological research. It overlaps with biochemistry, genetics and cell biology, and the structure of our degree course reflects this.

Over the last decade, recombinant DNA technology has allowed molecular biologists to make enormous advances in our understanding of how fundamental biological processes operate, by analysing, manipulating and controlling genes and proteins. This has culminated in the completion of several large genome projects that are changing the face of modern biology, especially in areas of medicine, agriculture and biotechnology.

We are starting to understand the molecular basis of illnesses such as cancer and inherited diseases, and in some cases, they can be treated using genetic tools.

Genetic manipulation in biotechnology enables the manufacture of such valuable products as blood clotting factors, insulin and vaccines. Our course gives you an understanding of these areas and practical experience in experimental approaches used in the laboratory.

"

I went to Paris on my placement year and worked on stem cell research. The year gave me valuable experience working as a research scientist and helped me decide which PhD to do once I finish my degree. I am still in contact with my colleagues from the lab and they have offered me a post-doctoral research job if I decide to go back to Paris after my PhD.

Claire Gaffney

Molecular Biology with a Modern Language

NEUROSCIENCE

Neuroscience with Industrial/ Professional Experience

Neuroscience with a Modern Language

Masters in Neuroscience (MNeurosci)

Neuroscience is the study of the brain and nervous system and how they work to generate behaviour, perception, movement, thought, memory and other key functions. These studies call on a wide range of knowledge and experimental techniques. New molecular approaches are advancing our knowledge of membrane receptor structure and giving remarkable progress towards understanding neural development. There have also been major advances in our understanding of the biology of higher brain function and the pathogenesis of a variety of neurological disorders, such as Alzheimer's disease and Parkinson's disease.

Our MNeuroSci course has an extra year in which a major research project is undertaken, culminating in the award of an undergraduate masters qualification. Ours is one of the few undergraduate masters in neuroscience in the UK.

"

If you take a look at the cover of a New Scientist magazine, every week one of the key stories on the front cover involves some new piece of neuroscience-based research. It is a very important field in biological research today and the course allows me to have a strong basic understanding of all areas of this rapidly growing field.

Matt Broadhead Neuroscience with Industrial Experience

PHARMACOLOGY

Pharmacology with Industrial/ Professional Experience

Pharmacology with a Modern Language

Pharmacology is the study of drug actions on living systems – where they act, what they do, how they are metabolised, and how they exert toxic effects. Understanding all of this requires studying drug actions at levels ranging from the single molecule to the whole organism. Pharmacology is therefore a very broad discipline, taking in aspects of molecular biology, chemistry, physiology and neuroscience. This course examines both the actions of current drugs and the development of new drugs.

The pharmaceutical industry is the UK's top research sector. One-quarter of the world's top medicines were developed in the UK. In 2009, this translated into the pharmaceutical industry spending £8.8 billion on UK research and development, and employing around 26,000 people. A further 250,000 people work in related industries, so all this adds up to a whole lot of career opportunities.

"

The Pharmacology course definitely has the most interesting practicals! These range from testing to see how alcohol affects your ability to concentrate and your hand-eye coordination, to seeing the physical and mental affects of nitrous oxide (laughing gas)... all within a controlled environment.

Siobhan Ahern

Pharmacology with a Modern Language

PHARMACOLOGY AND PHYSIOLOGY

Pharmacology and Physiology with Industrial/Professional Experience

These degrees take the most critical aspects of the disciplines of pharmacology and physiology and integrate them to form a structured programme of study. In the final year, your advisor will help to ensure that your course of study involves a balance between both subjects. Studying these two closely related disciplines will equip you for careers in either field, or in areas in which knowledge of both subjects is valuable.

Students doing Pharmacology and Physiology with Industrial or Professional Experience go on a variety of placements in their third year of study, including pharmaceutical companies and research institutes.

"

Pharmacology and Physiology was the perfect choice for me: I have learnt about some of the most striking phenomena of the body, and also how to understand the processes involved in disease and how different treatments work. I have also been able to study some slightly unusual optional units. In my second year, I was able to go and watch a post mortem at Manchester Royal Infirmary to complement a pathology course unit. This was incredibly memorable and interesting – although not something I would do again!

Jenni Walton-Gould Pharmacology and Physiology

PHYSIOLOGY

Physiology with Industrial/ Professional Experience

Physiology with a Modern Language

Physiology is the study of function in living systems. This could be in plants and animals, but in Manchester we concentrate on the function of humans and other mammals. Physiologists work at the level of whole organisms, tissues, cells and now molecules, and we use a wide range of methods in our experiments. A major challenge to physiologists in this the post-genomic era is to determine the function of the many uncharacterised proteins encoded by the human genome. This will involve understanding how these proteins influence the activity of cells, tissues and the whole organism in health and disease.

We encourage you to study our 'with Industrial/Professional Experience' degrees. Recent placements have been at Novartis and the Medical Research Council unit in the Gambia.

Physiology gives the opportunity to study the functions and different processes that keep the human body alive. I have experienced many enticing practicals on this course, such as studying the muscle activity in frog legs, and expressing fluorescently tagged proteins in human kidney cells in culture.

Victor Kouassi Physiology with Industrial Experience

PLANT SCIENCE

Plant Science with Industrial/ Professional Experience

Plant Science with a Modern Language

Plants lie at the base of nearly every food chain on our planet. Directly or indirectly, they provide us with all our dietary requirements and many of our raw materials for industry, clothing and leisure. Many plants are crucially important in biotechnology – providing, for example, vaccines, pharmaceuticals and even plastics. Plants are being looked to as a possible solution to climate change; crops are increasingly being grown to provide biofuels. In this context, plant sciences are more important now than ever before.

Our Plant Science course examines the growth, development and productivity of plants. To understand and exploit these processes, it is necessary to apply a wide range of biological areas, including genetics, molecular biology, biochemistry and cell biology. We offer a rich combination of seminars and interactive events; field studies are an enjoyable part of our provision. If you enter one of these degree courses, you may attend a field course on the Mediterranean island of Majorca, when the orchids are in bloom in the Easter vacation of your first year.

A tropical (eg Ecuador) or UK-based field course builds on this in your second year, while students doing Plant Science with Industrial or Professional Experience go on a huge variety of placements in their third year of study, including the Millennium Seed Bank, Royal Botanical Gardens (Kew), Ecotron research, agrochemical and organic farming-related research.

"

Plant science is increasingly important in society and is an exciting, innovative subject. In the Plant Science course you have great opportunities, such as biweekly plant science seminars and field courses. The field course to Majorca in the Easter holidays was a fantastic experience. Incorporating parts of other units from the first year and seeing them in the field was great; I enjoyed the focus on plants and it was a great alternative to a semester of lectures. I have applied for the second year field course to Ecuador, as I enjoyed my experience so much.

Max Harriman

Plant Science with Industrial Experience

ZOOLOGY

Zoology with Industrial/Professional Experience

Zoology with a Modern Language

Zoology studies the life of animals from cellular organisation, through structure and physiology, to behaviour, ecology and the organisation of populations. The subject has been around since at least the mid-17th century, but it is no less important today. Humans have been destroying habitats and hunting other animals for thousands of years and recent industrialisation and population growth have led to significant climate changes. These activities threaten all the species on Earth and a better understanding of animal life is essential if we are to minimise the deleterious effects.

In addition, general interest in animals has never been higher. Studying a wide range of animals is providing enormous insight to understanding some of the issues in general biology and can have very unexpected spinoff benefits in medical and engineering areas.

Zoology at Manchester is broadly based, covering all the key areas mentioned above. The flexible structure of our biology degrees at Manchester mean that it is easy to mix in other course units, whether plant science or molecular biology, to gain a competitive skill-set in order to pursue a lifelong career with animals. Your theoretical study is enhanced by knowledge and skills gained in field research, which forms an exciting part of the degree in your first and second year.

Students doing Zoology with Industrial or Professional Experience go on a variety of placements in their third year of study, including zoos, museums and wildlife charities.

"

Being a zoologist, I was able to go on two field courses this year. They were both definite highlights of my first year at The University of Manchester. The first to South Africa was amazing, seeing loads of large mammals up close, and I even got to play with lion cubs! The second was in Scotland and was still great fun, plus I got to know my course mates really well. I am definitely looking forward to more field courses in the future and also being able to specialise more as we get further into the degree, especially choosing our final project.

Ed Thomson Zoology





Career opportunities

Your time at university is an important investment in your future career potential and your ability to compete for the most desirable graduate jobs. Your employment prospects with a life sciences degree from The University of Manchester will be some of the best in the world. Our combination of teaching methods and opportunities for employability skills development can really help you to develop the qualities that today's graduate employers seek.

Our Careers Service regularly tops the polls amongst employers and students as the best in the UK. They provide a wide range of services to take advantage of, from mentoring, work experience, career management workshops and one-to-one advice sessions, to the University's exciting Manchester Leadership Programme. In the last few years, our students have regularly featured amongst the most employable in the world.

Careers in the life sciences

Approximately half of our graduates enter employment directly connected to the life sciences. Many aspire to careers in research and therefore go on to study for a masters degree, or a PhD, in specialist fields. A significant number also go on to study for further qualifications in vocational subjects, such as medicine, law, international business, or teaching. Our graduates choose to study at other universities around the world, or stay on here at Manchester. Other students go directly into life science roles after graduation.

Our graduates have gone on to work in the pharmaceutical and agrochemicals industries, in medical technology and in research institutes and government agencies. Popular roles include: clinical researcher, biochemist, research associate, clinical scientist and medical writer. Employers of our recent graduates have included AstraZeneca, GlaxoSmithKline, The Health Protection Agency and The National Health Service.

"

I'm currently studying for my PhD in biochemistry, specifically looking at how proteins are targeted and transported across membranes. Most days vary, but they usually involve designing and conducting my own experiments. I have frequent meetings with my supervisor to talk through results and establish in what directions my research will go. I attend lectures from visiting scientists and have even presented some of my own work at conferences in the UK and abroad.

"I use pretty much everything I ever learnt in my degree to help me in my PhD. Obviously you will need most of the scientific knowledge, but my degree helped to develop other skills too. Time management, extended writing, and communication skills are all vital to success in whatever field you choose to go into.

Nick Johnson BSc (Hons) Biology, 2008 graduate

Now PhD Student at The University of Manchester

I am a Regional Business Specialist, which is essentially a sales specialist role. I am field based and cover the North of England selling capital equipment within the life sciences sector. My job can be stressful and very busy, but I enjoy the challenges that it brings day-to-day. I get the opportunity to meet a diverse range of people from all sorts of different companies and organisations from global pharmaceutical companies to academic institutions and research centres.

Having a grounding in science is a definite advantage in my job; being able to understand the scientific language is sometimes a mystery in itself, but having a degree in a scientific subject certain helps with this. The fact that The University of Manchester offers varied degree courses also helps to understand different industry sectors within the scientific world.

Rachel West BSc (Hons) Plant Science, 2004 graduate

Now Regional Business Specialist at Shimadzu Corporation





Careers outside the life sciences

Studying life sciences at Manchester gives you excellent opportunities to develop skills that may transfer into a wide range of careers. These skills include effective communication, innovation, judgement and decision-making, organisation, problem-solving and teamwork. Such skills are highly sought after by graduate recruiters across all sectors. Our graduates also go on to graduate training programmes across management, finance, marketing, law, media and the civil service (amongst others). Examples of companies that hired our students onto their renowned graduate schemes in recent years include: financial services organisations, such as PricewaterhouseCoopers and investment bank JPMorgan; and household names such as Sony, John Lewis Partnership, BBC, Severn Trent Water and The Ministry of Defence.

"

My first job, on a BBC Natural World production, was a lucky break: a friend knew a friend. With this job under my belt, I applied for

an exciting new anatomy series, 'Inside Nature's Giants'. The show is based around the dissection of large species. I have filmed dissections of elephants, whales, giraffes and hippos, to name a few. This series has given me some amazing opportunities to work and meet with eminent scientists like Joy Reidneberg, Jim Hicks and Richard Dawkins.

"This all sounds very fortunate and it was, but TV doesn't suffer fools gladly. That's where my Manchester degree put me in good stead. It gave me a head start in how to research science. I had some great tutorials too (the biology of Harry Potter creatures being a personal favourite). They taught me how to communicate science with both top experts and the public.

Peter Fison BSc (Hons) Zoology, 2008 graduate Now TV Researcher at Windfall Fims

My biology degree definitely helps me both from a skills perspective and in understanding some of the cutting-edge technologies with which many of our clients are involved. For my final-year project I was involved in an enterprise project, and the commercial awareness that I developed throughout that year helps me in presenting practical business solutions to the legal problems I face day-to-day. It was also a really good talking point for interviews, as it really makes you stand out as having done something that proves your interests are wider than pure science.

Research is a big part of my job and my biology background means I not only have the skills needed for the task, but I also have a different approach that comes from not having the more traditional law background; this means I can often find more discrete cases or law, which is often the key to our client's dilemma.

Ed Spencer BSc (Hons) Biology, 2007 graduate Now Trainee Solicitor at Taylor Wessing

For more details on career options, visit our website:

http://bit.ly/HVuKwr or www.manchester.ac.uk/ls/undergraduate/careeropportunities



FOUNDATION YEAR

Life Sciences with a Foundation Year

Life Sciences with a Foundation Year is for you if you want to enter one of the degree courses offered by our Faculty of Life Sciences, but do not have the appropriate entry gualifications.

Our Foundation Year provides the necessary academic background in biology, chemistry and mathematics to prepare you for study on any of our BSc (Hons) degree courses. Successful completion of the Foundation Year allows you direct entry into these degree courses, many of which are available as fouryear degree courses. The extra year can be made up of a year of industrial or professional training, or a year abroad for a degree with a modern language. You can find out more about all these degree courses by looking at the relevant pages in this brochure.

Progression to your preferred course will require strengths in the relevant subject area, and some degree courses can require higher marks in certain subjects than others.

Where you study

Xaverian College

Most of the Foundation Year is taught by the experienced staff of Xaverian College, which is located in the Victoria Park area, about 1km south of our University campus. Xaverian College was graded outstanding in its most recent Ofsted inspection.

The University campus

We provide a complementary programme of tutorials, seminars and laboratory exercises at our main University campus. As a student on the Foundation Year, you are a full student member of our University; you are guaranteed a place in a University hall of residence and you have full access to all our facilities, including the University Library, computer and learning resource centres, and the wide range of sporting and social activities available to all students

How you learn

The Foundation Year is credit-rated, consisting of a total of 120 academic credits. You study both the theoretical and practical side of a common core of units in biology, chemistry and mathematics.

Biology

Biology forms approximately half the core content and lectures cover a wide range of areas, including cell biology, biochemistry, genetics, biotechnology, microbes and disease, ecology and physiology. Regular laboratory work reinforces the subject material and helps you to develop practical skills. Opportunities are also available for fieldwork.

Chemistry

More than one-third of the core consists of chemistry, involving the study of atomic structure, bonding, rates of reaction, inorganic and physical chemistry, organic and medicinal chemistry. Lectures on these subjects are supported by relevant laboratory practicals.

Mathematics

The units in mathematics enable you to manipulate and analyse experimental data accurately and to use statistical and mathematical techniques in a biological context. Study skills and help with the core content are provided through weekly tutorials.

How you are supported

In addition to academic tutorial support from staff at both Xaverian College and our University, you are allocated a personal tutor for pastoral support. Your tutor will be available for one-to-one meetings and will become well known to you.

How to apply

All applications should be made through UCAS.

"

I made great friends on the Life Sciences Foundation Year. That first year of uni was a cushion into the real world of uni, and I'm very glad I did it.

Evanthia Anastasiou Biology



"

The Foundation Year provided an excellent opportunity to ensure I was fully prepared for my degree course in Physiology. The year of study allowed me to learn some very useful skills and gave me the knowledge I needed to achieve success at degree level. The members of staff at Xaverian College were fantastic and were always there if and when support was needed. I would definitely do it all again if I had the chance.

Steph Kenyon Physiology





ACCOMMODATION

Discover your potential new home: www.manchester.ac.uk/accommodation

ADMISSIONS AND APPLICATIONS

Everything you need to apply to Manchester: www.manchester.ac.uk/ug/howtoapply

ALAN GILBERT LEARNING COMMONS

A brand-new independent learning resource for our students: www.manchester.ac.uk/library/learningcommons

CAREERS Many major graduate recruiters target our students; find out why: www.manchester.ac.uk/careers



Support for students who are also parents: www.manchester.ac.uk/childcare

DISABILITY SUPPORT

For any additional support needs: www.manchester.ac.uk/dso

FUNDING AND FINANCE

Fees, loans, scholarships and more: www.manchester.ac.uk/studentfinance

Discover what we offer our multinational community:



Online learning, computer access, IT support and more: www.manchester.ac.uk/itservices



One of the UK's largest and best-resourced university libraries: www.manchester.ac.uk/library



Visualise our campus, city and University accommodation: www.manchester.ac.uk/aboutus/travel/maps



Access online or order a copy of our 2013 prospectus: www.manchester.ac.uk/ug/courses/prospectus

Societies, events, peer support, campaigns and more:

SPORT Excellent clubs, leagues, classes and facilities, plus sport scholarships: www.manchester.ac.uk/sport

SUPPORT Dedicated academic, personal, financial and admin assistance: http://my.manchester.ac.uk/guest

STUDENTS' UNION

VIDEOS

See and hear more about the University: www.manchester.ac.uk/aboutus/video www.youtube.com/user/universitymanchester

www.umsu.manchester.ac.uk











CONTACT DETAILS

For further information about the courses, or about qualifications, please contact:

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For the most up-to-date course information, visit our website: www.manchester.ac.uk/lifesciences

Disclaimer

This brochure is prepared well in advance of the academic year to which it relates. Consequently, details of courses may vary with staff changes. The University therefore reserves the right to make such alterations to courses as are found to be necessary. If the University makes an offer of a place, it is essential that you are aware of the current terms on which the offer is based. If you are in any doubt, please feel free to ask for confirmation of the precise position for the year in question, before you accept the offer.

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Royal Charter Number RC000797 M103 05.12



