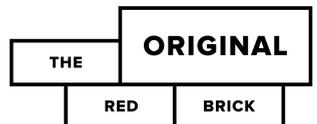




UNIVERSITY OF
LIVERPOOL

Life Sciences

2+2



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Why choose the 2+2 at the University of Liverpool?

Our story began in 1881 . . . The University of Liverpool became one of the first civic universities. **The original redbrick.**

Nearly 140 years later, we are still as original as ever - offering different viewpoints and daring ideas. Unique perspectives and a city bursting with character. We are uncovering world firsts through our pioneering research and helping you to forge your own original path. Studying in Liverpool will provide you with an amazing, life-changing university experience that will help you to achieve your ambitions.

Internationally recognised

- Ranked 165th in the Times Higher Education (THE) World University Rankings (2020)
- Ranked 164th in the QS World University Rankings (2019)
- 20th in the UK for research power with 7 subjects ranked in the top 10 in the UK's Research Excellence Framework (both Chemistry and Computer Science ranked #1 in the UK for 4* & 3* research THE 2014).

Benefits of studying in the UK

- Develop communication skills, flexibility, adaptability, empathy and a global outlook – attributes which are highly sought by employers
- No need for an IELTS when applying for postgraduate study in the UK
- Opportunity to explore the UK and Europe.

Graduate outcomes for 2+2ers

- 76% of all 2+2 graduates in Liverpool achieved a 1st or 2:1 upon graduation
- 80% of 2+2 graduates in Liverpool who were in further study after graduating from the University of Liverpool were enrolled in QS Top 100 Universities (DHLE 2020, University of Liverpool analysis of unpublished data)
- Ranked 1st in the Russell Group for graduate employability (DLHE 2016/17).

Support services

Happy students are successful students. In order to help you achieve your ambitions, the University of Liverpool has a wide range of services to support you throughout your studies, including:

- XJTLU student adviser
- Academic advisers
- International advice and guidance
- English Language Centre
- Careers Studio
- Student services (Health, Counselling, etc)
- Guild of Students
- Sports centre
- Libraries
- On-campus accommodation.

The university offers great facilities, the 24-hour library, informational Career Centre and the gym. The campus is a very friendly, passionate place with a good balance of studying and socialising.

Siqi Li
2+2 alumna in Communications and Media

Life Sciences at Liverpool

Choose Life Sciences at Liverpool and you will have more than 100 years of teaching and research experience supporting you. Over that time, we have developed an academic community that brings together biological and medical sciences, offering you a breadth and depth of flexible study choice we believe is unrivalled in the UK. In Liverpool, you can really shape your studies according to your interests, and be confident that the teaching you receive is informed by the very latest, ground-breaking research. We investigate development and normal function in humans, animals, plants, microbes and single cells, as well as disease processes and treatments. Life scientists work at the heart of critical topics for the planet, such as global warming, new energy sources, food security and pandemics.

Shape your study with real flexibility and choice

You will study in one of the largest Schools of Life Science in the UK, meaning you can shape your studies by choosing modules from across the entire spectrum of the life sciences. We aim to make you an expert in one particular field while having the ability to cross discipline boundaries, a combination of strengths that is highly attractive to prospective employers.

Enjoy excellent career prospects

You will benefit from our excellent international reputation for research in growth areas such as the biotechnology, post-genomic, environmental and pharmaceutical industries. New technological developments in genome sequencing and bioinformatics are providing fresh insights across life sciences, and the demand for graduates in these areas of science is therefore extremely high.

Strengthen your employability through overseas study

Boost your future prospects by taking part in field courses abroad. Our networks stretch as far afield as Uganda, Thailand and China.

Work in leading-edge facilities

More than £30 million has recently been invested in our facilities, such as our Biology Teaching Centre, the state-of-the-art Biosciences Building, the Biomedical Sciences Building and the Human Anatomy Resource Centre. This ensures your studies are fully supported by the very best in teaching and research equipment.

Languages at Liverpool

Studying a programme within Life Sciences allows you to study a language as an extracurricular course, on top of your degree. See liverpool.ac.uk/languages for more information.

How you learn

You will experience a range of learning environments during your studies at Liverpool. These will include student-centred activities as well as lectures, tutorials, laboratory practicals, dissection classes, fieldwork, data handling sessions and computer workshops. Some of these activities will be performed individually, such as personal research projects, and others in small tutorial or project groups, in addition to formal lectures and workshops. You will have research staff as well as your own academic

adviser for individual tuition on our acclaimed tutorial programme.

How you are assessed

As well as factual knowledge and understanding, biologists need practical and organisational skills, and an ability to work both alone and with other people. We record development of these abilities through continuous assessment during each semester and by final examination.

You will also prepare posters, complete tests, analyse data, give short talks, research the scientific literature and write essays and reports. The style of examination progresses from multiple choice questions, and short answers towards more extended formats such as essays and reports in the later years of each degree programme, as your understanding deepens.

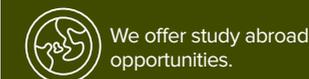
Summer Abroad

Once you arrive at the University you'll have the opportunity to apply for one of our exciting Summer Abroad programmes. Summer Abroad allows you to visit a new country whilst undertaking worthwhile academic study. Destinations include Australia, France and Canada. Find out more at: liverpool.ac.uk/study-abroad/outbound/what-is-study-abroad/summer/.



95%

are employed or in further study within six months of graduating (DLHE 2016/17).



We offer study abroad opportunities.



We offer accredited programmes.



We offer the chance to study a language.

Invest in your future

As a Life Sciences graduate from the University of Liverpool, you will have an excellent set of career options ahead of you.

In the public sector, Life Sciences graduates are in demand in research institutes, government departments, the National Health Service, forensic science and the Environment Agency. Commercial sectors that actively recruit graduates from the Life Sciences include the pharmaceutical, food, biotechnology, water and agriculture industries.

There is also an increasing demand for life scientists to contribute to the public understanding of science as journalists and information/liaison officers, in view of the ethical and environmental issues that arise, for example, by developments in molecular biology and biotechnology.

In addition to all of the opportunities for graduates in general, including careers outside of biology (such as management, accountancy and human resources), where the skills you have obtained in our degree programmes will be of considerable benefit.

In addition there is the option of the **LIFE399 Life sciences work-based placement** module. **LIFE399** is an optional third year module which runs during the course of the summer prior to Year Three. Students will undertake a placement to assist their personal development and employability, and will complete a skills audit, reflective log and report, based on their experience. The module is worth 15 academic credits.

STAFF PROFILE

Dr Kate Hammond

Dr Hammond is the programme director for BSc Genetics. An alumna of the University of Cambridge, she has a strong interest in developmental genetics, zebrafish genetics and evolutionary developmental biology. Dr Hammond teaches modules on genetics and development and supervises year three research projects.

Recent employers of our graduates

- AstraZeneca
- BBC
- Blue Planet Aquarium
- Chester Zoo
- Crown Prosecution Service
- Eli-Lilly
- Glaxo SmithKline
- Home Affairs, Security and International Development
- United Utilities
- RSPCA
- NHS
- Ministry of Defence
- Unilever
- Vodafone
- Public Health England
- Red X Pharma
- Royal Society of Biology
- The Environment Agency.

The University of Liverpool conducts advanced biological researches with excellent research facilities covering multiple areas. The modules are taught by the experts in the corresponding areas, so I can learn cutting-edge knowledge in various fields. Additionally, Liverpool provides a wide range of summer internships, which is really beneficial for my future career.

Peng Chai
2+2 student in Biochemistry

Articulation routes

Biochemistry BSc (Hons)

Biochemistry is the study of molecular structures and interactions in living organisms. Biochemists seek to understand living organisms in terms of chemical reactions.

If you have a natural curiosity for science and a proven understanding of biology and chemistry, coupled with a desire to learn how science can be exploited for the benefit of mankind, then you have a fascinating career ahead of you.

Biochemists are in great demand by employers and this degree will provide you with the knowledge and skills that employers want in medical and agricultural research, the pharmaceutical and other biotechnology industries, as well as in education.

Programme in detail

What is the biochemical basis of disease? How does DNA control our development, our metabolism and our personal characteristics? How do enzymes work and how do hormones control biological function? These are just some of the fascinating questions addressed in this programme.

In Year Three you will have the opportunity to complete a project in one of our excellent research laboratories, in Life Sciences, in our Medical, Veterinary and Dental Schools or even in a local hospital. You will become proficient in IT and will use the latest software to retrieve and analyse data. Communication skills, scientific writing and oral presentation, together with a range of other employability skills are also taught, enabling you to present your findings effectively to a range of audiences.

Key modules

Year Two Core modules

- Advanced biochemical techniques (LIFE224)
- Biological chemistry (LIFE245)
- Cell signalling in health and disease (LIFE202)
- E-biology: informatics for life sciences (LIFE225)
- E-biology: informatics for life sciences II (LIFE242)

- Essential skills for life sciences II (LIFE223)
- From genes to proteins (LIFE201)
- Molecular science (LIFE237)
- Structure and dynamics of macromolecules (LIFE203)
- Techniques in cell biology (LIFE227).

Selected optional modules

- Biotechnology (LIFE210)
- Drug Action (LIFE206)
- Molecular and Medical Genetics (LIFE208)
- Pharmacological Chemistry (CHEM038)
- Principles of pharmacology (LIFE207)
- The immune system in health and disease (LIFE221)
- The multicellular organism: tissues, development, regeneration and aging (LIFE205)
- Virology (LIFE209).

Year Three

Core modules

- Advanced skills in biochemistry (LIFE301)
- Biochemical messengers and signal transduction (LIFE304)
- Drug Metabolism and Drug Response (LIFE315)*
- Gene expression and development (LIFE323)
- Genes and cancer (LIFE302)
- Molecular medicine (LIFE306)
- Protein structure, function and organisation (LIFE303).

See pages 09-12 for module descriptions.

*With the agreement of the Programme Director

STAFF PROFILE

Dr Elliott Stollar

Dr Stollar is a lecturer in Biochemistry. With a PhD from Cambridge University, his research focuses on biophysical tools to probe protein structure, dynamics and interactions to gain a deeper understanding of protein interaction specificity.

Dr Stollar teaches a variety of modules, including Biochemistry, Biotechnology and Molecular Science.

Biological Sciences BSc (Hons)

This programme allows you to pursue your own areas of specific interest and to have an appreciation of the full range of the subject.

Should you decide sometime in the first two years that you wish to specialise, you can transfer to a number of programmes in the School of Life Sciences, subject to meeting the appropriate pre-requisites for your chosen programme.

Programme in detail

A progressive series of laboratory and lecture modules cover most biomolecular aspects of the Biological Sciences, with students able to select topics to match their interests. Modules are selected from more than 30 options offered within the School of Life Sciences.

In Year Three, you will undertake a research project that you will choose from one of the various parts of the School to complement the lecture programme chosen for your Honours year. Each project gives an invaluable opportunity to see what real scientific research is like and to work alongside staff who are international authorities in their fields.

Key modules

Year Two

Core modules

- Essential skills for life sciences II (LIFE223).

Selected optional modules

- Advanced Genetics Techniques (LIFE226)
- Advanced Microbiological Techniques (LIFE228)
- Advanced Biochemical Techniques (LIFE224)
- Biological Chemistry (LIFE245)
- Biotechnology (LIFE210)
- Cell Signalling in Health and Disease (LIFE202)
- Chemical Techniques (CHEM022)
- Drug Action (LIFE206)
- E-Biology (LIFE225)
- E-Biology II (LIFE242)
- Evolutionary Biology (LIFE213)
- Endocrine & Neuro-physiology (LIFE204)
- From Genes to Proteins (LIFE201)
- Molecular and Medical Genetics (LIFE208)
- Molecular Science (LIFE237)
- Pharmacological Chemistry (CHEM038)

- Practical Skills in Tropical Medicine (LIFE236)
- Principles of Pharmacology (LIFE207)
- Structure and Dynamics of Macromolecules (LIFE203)
- Techniques in Cell Biology (LIFE227)
- The Immune System in Health and Disease (LIFE221)
- The Multicellular Organism: tissues, development, regeneration and aging (LIFE205)
- Virology (LIFE209).

Year Three

Core modules

- Advanced skills in biological sciences (LIFE355)
- Research project (LIFE363).

Selected optional modules

- Advanced biotechnology (LIFE327)
- Bacterial disease mechanisms (LIFE318)
- Biochemical messengers and signal transduction (LIFE304)
- Chemotherapy of parasitic disease (LIFE338)
- Current Skills and Topics in Evolutionary Biology (LIFE324)
- Drug metabolism and drug response (LIFE315)*
- Gene expression and development (LIFE323)
- Genes and cancer (LIFE302)
- Genome biology and technology (LIFE342)
- Human and clinical genetics (LIFE321)
- Microbiomes - microbial diversity and host interactions (LIFE343)
- Molecular medicine (LIFE306)
- Molecular toxicology (LIFE316)
- Parasitology (LIFE361)
- Principles of molecular physiology research (LIFE309)
- Protein structure, function and organisation (LIFE303)
- Topics in global health (LIFE340)
- Vector biology: theory, research and implementation (LIFE359)
- Viral disease mechanisms (LIFE320).

See pages 09-12 for module descriptions.

*With the agreement of the Programme Director

Genetics BSc (Hons)

Genetics is at the cutting edge of modern biology and the fast pace of major new developments has made genetics an exciting field of study.

Recent developments in genomics, gene editing and biotechnology in particular, have led to huge advances in the fields of personalised medicine and genetic engineering; areas that have the potential to revolutionise how we treat and think about disease, how we produce crops and manufacture new biological materials. In short, modern genetics underpins all of biology. Whether your interests lie in medicine, cancer biology, evolution, biotechnology, plant genetics and food security or molecular biology, Genetics has something to offer you.

Programme in detail

Our degree programme aims to give you an appreciation of the full range of genetics while also allowing you to pursue areas of specific interest. During the course of your degree you will study modules in human and clinical genetics, gene expression and development, evolutionary genetics and biotechnology and will also have the opportunity to select from a wide range of optional modules. You will be taught by members of staff who are at the forefront of medical genetics, plant genetics, evolutionary genetics and genomics and also by visiting experts in fields such as forensics.

The programme is taught by a mixture of lectures, workshops, seminars, tutorials, and laboratory courses, culminating in an extended research project in your third year. This is your chance to study an area of cutting edge genetics in depth, while getting a real taste of life in an active research environment.

Key modules

Year Two

Core modules

- Advanced genetics techniques (LIFE226)
- E-biology: informatics for life sciences (LIFE225)
- Essential skills for life sciences II (LIFE223)
- Evolutionary biology (LIFE213)
- From genes to proteins (LIFE201)
- Molecular and medical genetics (LIFE208)
- Molecular science (LIFE237).

Selected optional modules

- Advanced biochemical techniques (LIFE224)
- Advanced microbiological techniques (LIFE228)
- Biotechnology (LIFE210)
- E-Biology II (LIFE242)
- Cell Signalling in Health and Disease (LIFE202)
- Techniques in cell biology (LIFE227)
- The immune system in health and disease (LIFE221)
- The multicellular organism: tissues, development, regeneration and aging (LIFE205)
- Virology (LIFE209).

Year Three

Core modules

- Advanced data-analysis for genetics (LIFE377)
- Advanced skills in genetics (LIFE319)
- Current skills and topics in evolutionary biology (LIFE324)
- Gene expression and development (LIFE323)
- Human and clinical genetics (LIFE321)
- Research project (LIFE363).

Selected optional modules

- Bacterial disease mechanisms (LIFE318)
- Genes and cancer (LIFE302)
- Genome biology and technology (LIFE342)
- Viral disease mechanisms (LIFE320).
- Becoming Human (LIFE364).

See pages 09-12 for module descriptions.



Microbiology BSc (Hons)

In spite of their size, the impact of microbes on the planet is so extensive that life as we know it could not exist without them.

In addition, microbes cause many of the known diseases of humans, animals and plants. Knowledge of microbiology will enable you to improve the quality of our lives in relation to the environment, to fight disease, and to combat pollution. Microbiology plays a key role in genetic engineering and other modern biotechnologies, such as antibiotic production and the exploitation of new sources of food and energy.

Programme in detail

This programme covers a broad range of topics, with in-depth knowledge of both natural processes and human affairs. You will study modules such as **Microbial diversity and versatility**, **Biotechnology** and **Advanced microbiological techniques**.

You will be able to identify individual species and grow them in pure culture, using aseptic techniques so that they can be safely handled and examined by microbiological methods. Project work will include the use of specialised research equipment alongside the members of the Microbiology Research Group and members of other departments, including medical and veterinary microbiologists in the Institute of Infection and Global Health and the Liverpool School of Tropical Medicine.

Key modules

Year Two

Core modules

- Advanced microbiological techniques (LIFE228)
- Biotechnology (LIFE210)
- Essential skills for life sciences II (LIFE223)
- Techniques in cell biology (LIFE227)
- Virology (LIFE209).

Selected optional modules

- Advanced genetics techniques (LIFE226)
- Cell signalling in health and disease (LIFE202)
- Drug Action (LIFE206)
- E-biology: informatics for life sciences (LIFE225)
- E-biology: informatics for life sciences II (LIFE242)
- From genes to proteins (LIFE201)
- Molecular and medical genetics (LIFE208)

- Molecular science (LIFE237)
- Practical skills in tropical medicine (LIFE236)
- Pharmacological Chemistry (CHEM038)
- The immune system in health and disease (LIFE221).

Year Three

Core modules

- Advanced skills in microbiology (LIFE325)
- Bacterial disease mechanisms (LIFE318)
- Chemotherapy of Parasitic Disease (LIFE338)
- Drug Metabolism and Drug Response (LIFE315)*
- Microbial diversity and versatility (LIFE329)
- Microbiomes - microbial diversity and host interactions (LIFE343)
- Research project (LIFE363)
- Vector Biology: Theory, Research and Implementation (LIFE359)
- Viral disease mechanisms (LIFE320).

*With the agreement of the Programme Director

Selected optional modules

- Advanced biotechnology (LIFE327)
- Becoming Human (LIFE364)
- Genome biology and technology (LIFE342)
- Parasitology (LIFE361)
- Topics in global health (LIFE340).

See pages 09-12 for module descriptions.

STAFF PROFILE

Dr. Gemma Wattret

An alumna of the University of Liverpool, Dr Wattret is a Lecturer in the School of Life Sciences and is the Programme Director for Microbiology. With research interests in food borne diseases and host-pathogen interactions, Dr Wattret has published in numerous prestigious journals. Dr Wattret teaches modules within the School of Life Sciences.

Selected module overview

Year Two

| Module title | Semester | Credit | Module description |
|---|----------|--------|---|
| Advanced biochemical techniques LIFE224 | 2 | 7.5 | Provides practical training in a number of techniques used in biochemistry, including analysis of enzyme activity and stability and protein purification and analysis using chromatography and electrophoresis. |
| Advanced genetics techniques LIFE226 | 2 | 7.5 | Provides practical training that will help you to carry out your projects in genetics. |
| Advanced microbiological techniques LIFE228 | 2 | 7.5 | Develops practical, research skills in microbiology by illustrating key concepts in microbiology. |
| Biological chemistry LIFE245 | 2 | 15 | This module aims to develop knowledge and understanding of the chemical process that underpins biology. Contents include thermodynamics, chemistry of water, organic structure and reactions, kinetics and enzyme activity, spectroscopy and bioinorganic and redox chemistry. |
| Biotechnology LIFE210 | 2 | 15 | This module introduces the ways in which biology is utilised for commercial purposes and describes the production of antibiotics, biomass, single cell protein, biopolymers and vaccines. You will develop your knowledge and understanding in biotechnology, and the ability to apply, evaluate and interpret this knowledge to solve problems in biotechnology. |
| Cell signalling in health and disease LIFE202 | 2 | 15 | This module gives an understanding of the molecular mechanisms that allow cells to communicate with each other and explains the general principles of these signalling mechanisms and then goes on to describe some of these in more detail. This module also illustrates how defects in these signalling processes can result in a variety of diseases. |
| Comparative animal physiology LIFE212 | 2 | 15 | Describes the physiological problems encountered by animals in their natural environments, and how they are overcome. |
| Chemical techniques CHEM022 | 2 | 7.5 | The aim of this module is to introduce students to the basic techniques used in synthetic organic chemistry. |
| Drug action LIFE206 | 2 | 15 | This module will enable students to develop their understanding of the cardiovascular, endocrine and central nervous systems and the mechanisms by which drugs interact with physiological processes operating within each of these systems. It will provide an insight into the mechanisms of immune function and dysfunction, and the actions of drugs that target the immune system. |
| E-biology: informatics for life sciences LIFE225/LIFE242 | 1 or 2 | 7.5 | Provides a practical appreciation of the nature and significance of both the scientific and ethical dimensions of digital data. |
| Endocrine and neuro-physiology LIFE204 | 2 | 15 | This module aims to explain the essential background knowledge to understand basic neuroscience. This module will also provide an understanding of physiological homeostatic regulatory mechanisms, with particular regard to the endocrine and digestive systems and develop knowledge and understanding in physiology, and ability to apply, evaluate and interpret this knowledge to solve physiological problems. |
| Essential skills for life sciences II LIFE223 | 1 and 2 | 15 | Further develops the essential life science skills that are required to improve your study skills. |

Continued over...

| Module title | Semester | Credit | Module description |
|---|----------|--------|--|
| Evolutionary biology LIFE213 | 1 | 15 | Provides a modern framework for understanding how organisms evolve and the major transitions in evolution. |
| From genes to proteins LIFE201 | 1 | 15 | This module gives knowledge and understanding of the mechanisms involved in gene expression and how these mechanisms are regulated in prokaryotic and eukaryotic cells. You will gain the ability to explain how post-translational modifications modify protein structure and function and the ability to apply, evaluate and interpret this knowledge to solve problems in genetics. |
| Molecular and medical genetics LIFE208 | 2 | 15 | Introduces the range of biological mechanisms that control the structure and stability of the genetic material. |
| Molecular science LIFE237 | 1 | 7.5 | This module aims to provide students with practical experience in a number of techniques used in molecular biology and equip students to perform analysis of DNA fragments by agarose gel electrophoresis. You will be introduced to PCR-based assays for gene cloning and demonstrate methods used for cloning, and analysing genes. |
| Pharmacological Chemistry CHEM038 | 2 | 15 | The module offers students a grounding in organic chemistry and spectroscopy that is directly relevant to Pharmacology. There is a particular emphasis on relating each topic studied to pharmacological examples. |
| Practical skills in tropical diseases LIFE236 | 2 | 7.5 | Enhances knowledge and understanding of the biology and control of parasites of medical importance, and their vectors. |
| Principles of pharmacology LIFE207 | 1 | 15 | Develops an understanding of the quantitative aspects of drug action on cellular receptors and demonstrates the relationship between drug efficacy and chemical structure. |
| Structure and dynamics of macromolecules LIFE203 | 1 | 15 | Provides knowledge and understanding of the latest methodologies and techniques that are used to study the fine detail of macromolecules. |
| Techniques in cell biology LIFE227 | 1 | 7.5 | Trains you in microscopy, and the ability to use different microscopic techniques to analyse cell structure and function. |
| The immune system in health and disease LIFE221 | 1 | 15 | Develops knowledge of the immune system and its role in protection against disease. |
| The multicellular organism: tissues, development, regeneration and aging LIFE205 | 1 | 15 | Extends knowledge of the structure and function of fundamental tissues, such as epithelial and connective tissue and of specialised tissues. |
| Virology LIFE209 | 1 | 15 | Introduces the fundamental features and properties of viruses and viral infections and builds on knowledge and understanding of the use and development of molecular biology technologies in virology and the capacity to describe problems associated with viruses and their control, and identify positive applications of viruses. |

STAFF PROFILE

Professor Luciane Vieira de Mello

Professor Mello is a Professor of Bioscience Education at the University of Liverpool. In addition to publishing over 40 research articles in biochemistry and bioinformatics, she recently was awarded the Biochemical Society's 2019 Teaching Excellence Award. She is also the Chair of the Biochemical Society's Training Theme Panel and teaches a wide variety of modules within the School of Life Sciences.

Please note: modules are illustrative only and subject to change.

Selected module overview

Year Three

| Module title | Semester | Credit | Module description |
|--|----------|--------|--|
| Advanced biotechnology LIFE327 | 1 | 15 | Describes current approaches to exploit microorganisms and microbial processes in the context of modern developments in biotechnology. |
| Advanced data-analysis for genetics LIFE377 | 1 and 2 | 15 | The module aims to provide students with data analysis skills required in a variety of contexts drawn from across modern genetics and an appreciation of their importance. |
| Advanced skills in biochemistry LIFE301 | 1 and 2 | 15 | This module develops your science presentation skills in various formats and to various target audience and will enhance your ability to search, identify, apply, critically evaluate and interpret biochemical knowledge to solve complex problems. This module also provides advice, inspiration and guidance for career development and employability. |
| Advanced skills in genetics LIFE319 | 1 and 2 | 30 | Enables you to critically evaluate scientific information in the context of genetics, including that obtained from the published literature, research seminars and online genetic databases. Familiarises you with topical issues and ethical considerations in genetics and develop problem solving skills in relation to experimental, bioinformatics, medical and forensic methods in genetics. |
| Advanced skills in microbiology LIFE325 | 1 | 15 | Develops the skills necessary for using databases to solve problems in microbiology. Introduces current scientific methodologies and topical issues within microbiology and develops enhanced presentational skills. |
| Bacterial disease mechanisms LIFE318 | 2 | 15 | To explain to students the common themes and diversity of mechanisms used by bacteria to cause disease. To develop in students an understanding of virulence strategies used to achieve infection, including subversion of host immunity, expression of bacterial toxins motility and intracellular survival. |
| Becoming human LIFE364 | 2 | 15 | This module aims to develop an understanding of the genomics, development, ancient and modern evolutionary history of the human and evolutionary lineage. Students will be able to appreciate the mechanisms anthropology that underlie evolutionary change, with particular reference to examples relating to human evolution. |
| Biochemical messengers and signal transduction LIFE304 | 2 | 15 | Evaluates and describes the latest knowledge and ideas on how cells respond to external signals and how signalling information is transferred within and between cells. |
| Current skills and topics in evolutionary biology LIFE324 | 2 | 15 | To develop in students the skills to construct phylogenetic trees and to use them to infer the evolutionary origins of novel traits, using the latest software packages. To encourage students to explore key concepts in contemporary evolutionary biology. |
| Chemotherapy of parasitic disease LIFE338 | 2 | 15 | Develops an understanding of current concepts of antiparasitic chemotherapy, with attention being directed at the major classes of anthelmintics and antiprotozoal drugs. |
| Drug metabolism and drug response LIFE315 | 11 | 5 | Looks at drug metabolism, pharmacokinetics, drug response, and pharmacodynamics. |

Continued over...

| Module title | Semester | Credit | Module description |
|--|----------|--------|--|
| Gene expression and development LIFE323 | 1 | 15 | Provides a systematic knowledge and a critical understanding of how living organisms control their pattern of gene expression. |
| Genes and cancer LIFE302 | 2 | 15 | Develops an understanding of how cancer occurs and the role of oncogenes and tumour suppressor genes in the development of human cancer. |
| Genome biology and technology LIFE342 | 2 | 15 | To enable students to perform an analysis of genome structure and function. To familiarise students with the arguments and the evidence supporting the molecular and evolutionary processes that shape eukaryotic and prokaryotic genomes. To develop in students an understanding of how comparative genomics can provide insights into evolutionary processes as well as biological function of genes. |
| Human and clinical genetics LIFE321 | 1 | 15 | Develops an advanced understanding of modern medical genetics by expanding on fundamental principles introduced at Level Five. |
| Microbiomes - microbial diversity and host interactions LIFE343 | 1 | 15 | The module provides students with the theoretical and practical knowledge to understand and engage with microbiome research. |
| Molecular and neuropharmacology LIFE317 | 2 | 15 | Explores the pharmacology of drugs acting on central and peripheral nervous system pathways. |
| Molecular, clinical and translational cancer LIFE373 | 1 | 15 | To enable students to develop an understanding of the biological mechanisms underpinning cancer and its treatment. To provide the students with an opportunity to explore and discuss the principles involved in cancer detection, diagnosis and therapy. |
| Molecular medicine LIFE306 | 2 | 15 | Describes the application of molecular and computational approaches in the study and treatment of human disease. |
| Parasitology LIFE361 | 1 | 15 | Provides you with knowledge of the major features of the structure and life histories of a range of protozoan and helminth parasites of humans. |
| Protein structure, function and organisation LIFE303 | 1 | 15 | Develops knowledge and understanding on why protein structures are important for function, and how proteins fold into functional conformations. |
| Research project LIFE363 | 1 and 2 | 30 | Provides you with an insight into and experience of the process of scientific research and debate and develops the confidence to work independently and with others, to effectively and efficiently achieve a scientific aim. |
| Topics in global health LIFE340 | 2 | 15 | Enhances awareness of the global distribution of disease and the associated implications and inequalities. Enhances awareness of the global impact of poverty and the negative and positive impacts of human activity in the spread of disease. |
| Vector biology: theory, research and implementation LIFE359 | 1 | 15 | This module describes current research into vectors and vector-borne diseases and demonstrates how this research answers broad-ranging questions in vector biology and leads to novel vector control strategies. You will develop your knowledge and deep understanding in tropical disease biology, and ability to apply, critically evaluate and interpret this knowledge to solve complex problems. |
| Viral disease mechanisms LIFE320 | 2 | 15 | Evaluates the latest research on the role of viruses as important pathogens of humans and animals. Explains in detail, viral virulence mechanisms, immune evasion and vaccine development. |

Please note: modules are illustrative only and subject to change.

Student support in the School of Life Sciences and next steps

As a Life Sciences student, you will have access to state-of-the-art technology within the recently refurbished Biology Teaching Centre and laboratory facilities. Not only will the physical environment support your learning, but the support within the school will help you to succeed.

Supportive staff

We are a large, but friendly School. You will have an allocated personal tutor who will offer you support and instruction both formally and via one-to-one drop-in sessions.

Employability

The School of Life Sciences Employability team offers events and provides resources to help you decide where you want your degree to take you.

Next steps

You will be automatically registered for the modules which are compulsory for you programme.

You will register for your optional modules during Welcome Week (week 0) upon your arrival in Liverpool. Staff will be available to answer any questions that you may have about your module selections.



STAFF PROFILE

Dr Rachel Floyd

Dr Floyd is the Programme Director for Biological Sciences. In addition to teaching numerous modules in Biological Sciences, her research focuses on the pathogenicity and persistence of Gram-negative bacteria during urinary tract infections and they they might be manipulated therapeutically. As a result of her research, Dr Floyd won a highly competitive Kidney Research UK fellowship.

The University of Liverpool provides diverse courses in my interest area.

Yihan Dai
2+2 student in Genetics



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Information provided is correct at time of going to press and is subject to change.