

## **UCL Residential Summer Schools 2019**

### **Maths and Computer Science, 22<sup>nd</sup> – 26<sup>th</sup> July 2019**

#### **Summer School Title: Games, Programming and Artificial Intelligence**

In 2015, Google's AlphaGo became the first computer to beat the human world champion at Go - a game in which humans were expected to always outperform computers. This is just one example of the power of modern computers and our ever-increasing dependence on them, from making money on the stock market to flying planes. During this summer school, you will use Python programming language to build your own robot capable of playing the simpler Connect 4. You will learn about different strategies, and think about how computers can use them and see how computers are taught to do so many things. At the end of the week, you will pitch your program against the other students in a tournament to see who the ultimate tactician is.

**Required A level subjects:** Maths and Further Maths

For further information and other qualifications, please visit our website:  
<https://www.ucl.ac.uk/maths/study/bscmsci-mathematics/admissions>

### **Architecture, 5<sup>th</sup> – 9<sup>th</sup> August 2019**

#### **Summer School Title: A City for the Flowers**

This intensive Bartlett Summer school will provide you with the chance to gain hands-on experience in architecture and learn about observing, sketching, designing and making, using nature and London as your sources of inspiration. You will spend a whole day in Kew Gardens where you will be asked to pick a specific species of a plant and study its form, origins, the history of its transportation to London and the design of the building that houses it in Kew. These studies will be brought back into the studio of the Bartlett and will be examined through various media, such as drawings, sketches, photography. You will then be asked to redesign a new home for this species and place it in the city. In addition, you will spend time in the Victoria and Albert Museum studying pieces of the Art Nouveau collection - a movement heavily focused on and inspired by natural elements. At the end of the summer school, the students will have produced a series of objects and documents, representative of their experience and imagination. The school will introduce you to various ways of thinking about plantation, architecture and the city.

**Required A level subjects:** No specific subjects

### **Biosciences, 5<sup>th</sup> – 9<sup>th</sup> August 2019**

#### **Summer School Title: Biomedical Sciences at the Cutting Edge**

Recent advances in the Biomedical Sciences has shown how important and fast moving a science it is. From genome sequencing and editing to new understandings of the workings of the body, the importance of our research has never been clearer... The potential impacts are huge, from boosting the economy to transforming our society. . In this residential summer school, you will find out more about the cutting-edge world of the Biomedical Sciences. We shall investigate the Biosciences at the macro-level, at the micro-level and at the molecular-level. The school will include

lectures and discussion groups, but the main activities will be conducting research in the lab. At the end of the week, you will present on the findings of your research and on your own personal reflections. Our aim is that you leave with a better understanding of what Biosciences research is and, what it would be like to study at a University level!

**Required A level subjects:** Biology, Chemistry and Mathematics

For further information and other qualifications, please visit our website:

<https://www.ucl.ac.uk/biosciences/study/undergraduate>

### **Chemical Engineering, 5<sup>th</sup> – 9<sup>th</sup> August 2019**

#### **Summer School Title: Introduction to Chemical Engineering and Chemical Engineering Careers**

The aim of this summer school is to give students a taste of UCL's Chemical Engineering Programme. We will offer a number of activities to familiarise students with the basics of chemical engineering. Participants will be involved in some experimental laboratory sessions, introducing them to the fundamentals of how chemical processes, such as distillation and chemical reactors operate. They will also engage in some computational workshops to understand how process simulation can be used to design, analyse and optimise chemical processes. Students will also compete in activities such as Chemical Reaction Powered Car Challenge (ChemCar) in which you will work in a team of peers to design a car that is powered by a chemical reaction!

Speakers from industry will offer a special session, sharing their experience of studying Chemical Engineering, and they will give advice about choosing a career after graduation. We look forward to meeting you this summer!

**Required A level subjects:** Mathematics and Chemistry

For further information and other qualifications, please visit our website:

<http://www.ucl.ac.uk/prospective-students/undergraduate/degrees/engineering-chemical-meng/2019>

### **Physics and Astronomy, 19<sup>th</sup> – 23<sup>rd</sup> August 2019**

#### **Summer School Title: Astrophysics**

Astrophysics is the ultimate application of physics knowledge, covering almost every aspect of modern physics from classical to quantum mechanics, thermal physics, computational data analysis and extreme problem solving. With UCL leading a multi-million pound European mission to study newly discovered planets, we aim to continue to innovate. Due to launch in 2028, there has never been a better time to begin a career in space research at UCL.

On this summer school, you will go on trips to the Mullard Space Science Laboratory (MSSL) and a to UCL's own observatory to tour the facilities and observe the Sun. You will also attend workshops on coding and exo-planet hunting. This summer school will give you a taste of some of the exciting opportunities a degree in Astrophysics opens up, both in space and on Earth!

**Required A level subjects:** Mathematics and Physics

For further information and other qualifications, please visit our website:  
<http://www.ucl.ac.uk/prospective-students/undergraduate/degrees/astrophysics-msci/2019>

### **Natural Sciences, 19<sup>th</sup> – 23<sup>rd</sup> August 2019**

#### **Summer School Title: An Introduction to Natural Sciences**

The Natural Sciences at UCL enables students to shape a unique degree suited to their personal interests, delivering combined science subjects in a structured and coherent programme. Perfect for students interested in a breadth of scientific subjects, the degrees draw together two elements of Physics/Astrophysics, Maths/Statistics, Chemistry, Earth Sciences, Life Sciences, and Science and Technology Studies. On this summer school, you'll learn how the Natural Sciences bring these elements together and how combining these disciplines can be used to tackle current challenges. You will experience life as an undergraduate, undertaking laboratory work in Chemistry and Life Sciences and learning to code for Physics problems' Working in small groups to research a topic you find interesting, you will have the opportunity to present to the cohort at the end of the week. Current undergraduate student leaders will help to guide your research and refine your presentation and communication skills as well as telling you their experiences of studying at UCL.

You will hear about ways to fund your studies and the range of careers a degree in Natural Sciences could lead you to from Student Finance and the Careers departments. We will also discuss applying to this degree programme, including what we look for in applicants and their personal statements. We look forward to seeing you this summer!

**Required A level subjects:** Any two subjects from Biology, Chemistry, Mathematics or Physics

For further information and other qualifications, please visit our website:  
<http://www.ucl.ac.uk/prospective-students/undergraduate/degrees/natural-sciences-msci/2019>

### **Applied Health Research, 5<sup>th</sup> – 9<sup>th</sup> August 2019**

#### **(Related Degree Programmes: Psychology, Social Sciences, Medicine)**

#### **Summer School Title: Health Inequalities: Research and Practice**

Do you think it is fair that there are avoidable differences in health and health care between population groups? Do you want to help tackle this issue through research, or through clinical or public health practice? This weeklong residential course is run in collaboration with the Health Inequalities Research Network (HERON). It will introduce you to what health inequalities are, social determinants of health and how applied health research might address problems of unfair differences in health and care. During the week, you will develop a research question, and proposal on how to address it, about a health-related issue that is important/interesting to you. You will learn about research methods relevant to your question, hear examples of how health inequalities are addressed by the NHS and Public Health England, and develop your presentation and public speaking skills. At the end of the week, you will

present on your research and the answers you have found. Guidance will be provided from current students and academic staff, and sessions will take the form of practical classes and university-style lectures.

**Required A level subjects:** No specific subjects

Please note, this is not a subject you can study at Undergraduate level, for information on UCL Undergraduate degrees, please visit:

<http://www.ucl.ac.uk/prospective-students/undergraduate/degrees>

### **Population Health, 5<sup>th</sup> – 9<sup>th</sup> August, 2019**

#### **Summer School Title: Data Science, Health and Wellbeing: Uncovering the inequality**

Did you know that if you travel on the Tube in London from Westminster to Canning Town, life expectancy falls by one year for every stop that you pass? Does this bother you? Find out how to identify these and other inequalities in health on the Data Science, Health and Wellbeing Summer School at UCL. You will learn about what health and wellbeing in a global context means, how to measure health and what effect social factors have on our wellbeing. This summer school will also equip you with transferable skills in data analytics that are sought after by graduate employers across different sectors. You will learn how to calculate descriptive statistics of health and socioeconomic data, compute mortality rates for England and Wales, and create data visualisations to showcase your findings. Working in groups, you will conduct a research project using data from London and other districts in England to show how health and wellbeing varies by population group.

In addition to lectures, seminars and computer classes, you will have the chance to visit museums that tell the story of our health today and in the past, including the Wellcome Collection and Grant Museum of Zoology. We look forward to meeting you in the summer!

**Required A level subjects:** No specific subjects

For further information and other qualifications, please visit our website:

<http://www.ucl.ac.uk/prospective-students/undergraduate/degrees/population-health-bsc/2019>

### **English, 22<sup>nd</sup> – 26<sup>th</sup> July 2019**

#### **Summer School Title: UCL English Summer School**

What is English Literature? What makes some texts “literature”, and other texts not? Whose voices are heard and whose are silenced? How has literature in English developed over time? What do we mean when we talk about “narrative”?

This course opens up some key debates about what literature is, how our definition of literature has changed, and how we define narrative. We follow the first-year undergraduate Narrative Texts course by looking at several key “canonical” texts among others. You will use these texts to develop an understanding of the role they play in how English literature is studied and theorised. Seminar sessions will leave space to question why some works have entered the 'canon' and others have not. This interdisciplinary course introduces an array of texts from a diverse set of

perspectives and historical periods and allows for a variety of methods and approaches to different media. In addition to novels, plays and poetry, the course encourages students to explore and compare film, visual art and other media, with visits to galleries and museums to complement and enhance the week's lectures and seminars. With sessions on applying to UCL, this summer school is perfect for anyone interested in studying English at the University level.

**Required A level subjects:** English Literature (or combined Literature and Language)

For further information and other qualifications, please visit our website:

<http://www.ucl.ac.uk/prospective-students/undergraduate/degrees/english-ba/2019>

### **Laws, 22<sup>nd</sup> – 26<sup>th</sup> July 2019**

#### **Summer School Title: Exploring Law and Legal London**

This Summer School will introduce you to the study of law at university. You will attend introductory sessions on law and legal studies, as well as sessions on substantive law in areas such as Criminal, Contract, Family and Employment Law. Teaching and learning will be via a combination of lectures, small group teaching and interactive workshops. You may also have the opportunity to visit one of the Inns of Court and/or a law firm and/or the Supreme Court. By the end of the Summer School, you will have a greater understanding of what studying law at University entails and a greater understanding the legal profession and of the paths to becoming a lawyer.

**Required A level subjects:** No specific subjects

For further information and other qualifications, please visit our website:

<http://www.ucl.ac.uk/prospective-students/undergraduate/degrees/law-llb/2019>

### **Modern Languages, 22<sup>nd</sup> – 26<sup>th</sup> July 2019**

#### **Summer School Title: UCL Modern Languages Summer School**

Are you already studying a language or even two? Do you like exploring literature, films, art, music, food and all sorts of other cultural aspects of other countries? Are you curious about what studying languages and cultures at university would be like? Then come to our summer school!

The School of European Languages, Culture and Society teaches no fewer than 11 different languages\*, and has a vast range of courses in everything cultural: French cinema, Italian Renaissance study, Latin American poetry, German medieval comic tales, material 'stuff' in the Viking age, Dutch socio-linguistics and much, much more!

The summer school will draw on as much of these languages and cultures as we can fit in in a week. We will start the week with considering what languages and cultures actually are, what they do and what they mean, and what they are "for". There will be morning lessons in French and Spanish\*\* for those of you who study these languages, as well as some sessions with new languages you may not have considered studying before! In the afternoons, there will be sessions on cultural

topics, drawn from several of the six departments and making use of nearby facilities. The weeklong group project task will be based on this session, while allowing you to use examples from all the other classes to explore its topic further. And somewhere along, there might be some special European treats to be had...Welcome to SELCS! We look forward to seeing you this summer.

*\*French, Spanish, Italian, German, Portuguese, Dutch, Danish, Norwegian, Swedish, Icelandic and Old Norse.*

*\*\* Might also include German and/or Italian*

**Required A level subjects:** French, Spanish or your chosen language

For further information and other qualifications, please visit our website:

<http://www.ucl.ac.uk/prospective-students/undergraduate/degrees/modern-languages-ba/2019>

### **Psychology with Education, 22<sup>nd</sup> – 26<sup>th</sup> July 2019**

#### **Summer School Title: Psychology with Education at UCL Institute of Education**

This summer school aims to provide participants with an opportunity to learn about how our understanding of education can be improved using psychology.

You will be introduced to the field of psychology as a science, through exploring how different behaviours can be measured and discussing the validity and reliability of these measures. You will take part in real experiments and explore the strengths and weaknesses of the measures used. There will also be trips to museums and/or exhibitions to gain a better understanding of the history of psychology and its applications.

The summer school aims to give students an experience of studying at university in terms of building independence and the ability to critically evaluate theory and research. You will also receive sessions on the UCAS application process and potential career pathways. At the end of the summer school, you will have a clear understanding of what Psychology is, the key areas of study in the Psychology with Education undergraduate degree, knowledge of some of the skills required to pursue a career in psychology and education and the confidence to challenge the outcomes of research.

**Required A level subjects:** No specific subjects

For further information and other qualifications, please visit our website:

<http://www.ucl.ac.uk/prospective-students/undergraduate/degrees/psychology-education-bsc/2019>

### **Arts and Science, 5<sup>th</sup> – 9<sup>th</sup> August 2019**

#### **Summer School Title: The UCL Arts and Sciences (BASc) Programme.**

Are you a dynamic thinker who loves challenge? Do you enjoy a wide range of academic interests? If so, the UCL Arts and Sciences (BASc) degree may well be the perfect fit for you! Delivered by current staff and students from this pioneering interdisciplinary programme, you will get the chance to explore the many different

pathways this degree offers. After an overview of the different routes available on the programme, you will learn about the degree Core courses, designed to help you to make connections across different subjects. You will attend a series of hands-on Science, Social Science, and Arts and Humanities workshops and lectures - giving you a taste of what it is like to study across disciplines at the University level. Our residential Summer School will provide an exploration of this exciting degree where you are given the opportunity to shape your studies towards your own academic strengths - without having to drop the subjects you enjoy.

**Required A level subjects:** Dependant on pathway. Please see below.

For further information and other qualifications, please visit our website:

<http://www.ucl.ac.uk/prospective-students/undergraduate/degrees/arts-sciences-basc/2019>

### **Philosophy, 5<sup>th</sup> – 9<sup>th</sup> August 2019**

#### **Summer School Title: Introduction to Philosophy**

Why do we think that certain things are right and wrong? Why do we obey the laws of the state? What is the relationship between our minds and the world we live in? If you want to answer such questions and think critically about arguments, Philosophy could be the degree for you! This summer school program will introduce you to a range of philosophical problems that have bothered thinkers since ancient times and are still major areas of research in contemporary academic philosophy. Students completing the program will become familiar with the intellectual style and character of philosophy, and will acquire a sturdy foundation for continuing with the study of philosophy at the BA level. There will be four main topics, ethics, political philosophy, language, and the mind, so you will be able to explore a range of philosophical problems. You will leave the summer school more informed about what philosophy is and with the knowledge that it is good fun!

**Required A level subjects:** No specific subjects

For further information and other qualifications, please visit our website:

<http://www.ucl.ac.uk/prospective-students/undergraduate/degrees/philosophy-ba/2019>

### **History, 19<sup>th</sup> – 23<sup>rd</sup> August 2019**

#### **Summer School Title: Making History**

What is the difference between history and a story? What things do historians use to learn about the past? 'Making History' will draw on the incredible historical resources afforded by UCL's central London location. We will introduce you to some new kinds of historical sources, and new ways of thinking about the past. You will learn how to

engage critically with the sources historians use and the arguments they make. You will hear great lectures from experts on a variety of historical topics and work closely with some of our finest historians to put together a group presentation and two short written reports.

**Required A level subjects:** History

For further information and other qualifications, please visit our website:

<http://www.ucl.ac.uk/prospective-students/undergraduate/degrees/history-ba/2019>

### **Fine Art, 19<sup>th</sup> – 23<sup>rd</sup> August 2019**

#### **Summer School Title: An Introduction to Studio Practice with Portfolio Support**

Every year, UCL runs a number of residential summer schools for students in year 12 attending non-selective state schools. These give students a taste of university life and the degree programme. All costs are covered by UCL. Slade School of Fine Art will be running a one week An Introduction to Studio Practice with Portfolio Support from 19<sup>th</sup> – 23<sup>rd</sup> August 2019

The Slade School of Fine Art's Introduction to Studio Practice is a weeklong course in Fine Art, involving Drawing, Sculpture, Photography, Video, Painting, Performance and Contextual Studies. Each day you will explore aspects of these disciplines and the ways they connect, through practical studio sessions. This course will enable you to gain some expert tuition in art and experience working in an art school studio. You will gain an insight into the studio culture and tutorial approaches you might experience at degree level study in Fine Art. You will become more confident in working independently outside of your normal learning environment. You will be encouraged to experiment, to extend your drawing and making skills and to engage in dialogue with peers and mentors about your work. Your studio work will be structured by contextual studies through lectures, seminars and tutorials and opportunities to interact with peers attending other courses, Foundation students, Slade Undergraduate and Postgraduate students. There will be a session to answer all your questions on creating a portfolio for a degree application. At the end of the week, you will take part in producing an exhibit, followed by a private viewing. Materials will be provided and all work will be documented for use in portfolio applications. This summer school offers a one day follow-on workshop on Saturday 26<sup>th</sup> October 2019 in the Winter half term. This workshop will bring your summer school peer group together again for portfolio reviews, support and advice on applications to Fine Art degree courses by Slade staff as well as encouraging you to carry on developing your independent practice. All costs are covered by UCL, including travel and refreshments on the day.

**Required A level subjects:** No specific subjects

For further information and other qualifications, please visit our website:

<http://www.ucl.ac.uk/prospective-students/undergraduate/degrees/fine-art-ba/2019>

## **Geography, 19<sup>th</sup> – 23<sup>rd</sup> August 2019**

### **Summer School Title: What on Earth is going on with the world? Global changes and Bending the Curve**

For much too long now, we humans have been affecting the planet in ways that are very unsustainable; polluting our land and oceans, stripping away our natural environments and scouring deep into the earth for ancient resources.

Graphs in planetary carbon dioxide emissions, species decline and land-use all show nearly identical trends of exponential growth. As global population is expected to exceed 9 billion by 2050 these curves are not going to straighten out, let alone bend to reverse these trends, as they need to, without radical changes. It's time to 'bend the curve' and you could be the ones to do it!

On this summer school you will attend lectures, Q&A sessions, and go on field trips around London to learn about the drivers of change to our environment. In groups, you will work to come up with a new idea to engage people on environmental change. At the end of the week, you will present your ideas to improve your persuasion and presentation skills.

This course will provide you with an overview of the pressures facing our planet, and the role of geographers and scientists in reducing the impact of man on the earth. Moreover, you will learn how an understanding of the Earth's past and its systems will allow us to learn to be better guardians in the future.

**Required A level subjects:** Geography

For further information and other qualifications, please visit our website:

<http://www.ucl.ac.uk/prospective-students/undergraduate/degrees/geography-bsc/2019>

## **Archaeology, 19<sup>th</sup> – 23<sup>rd</sup> August 2019**

### **Summer School Title: You're Fired: Archaeology, ceramics & human consumption over time and space**

"You're Fired!" Join us in the UCL Institute of Archaeology to explore, learn and create your own piece of history! Through a series of lectures, practical sessions and fieldtrips, you will learn about our ancestors and their use of ceramics over time and space. You will work in groups to recreate a certain type of pottery from a set period and location. Over your week you will not only create your own ceramic vessel but you will also learn how to vlog, creating a short video about your work. You will learn in how to best present both the practical and theoretical concepts of your work.

In Archaeology we believe in research and practical learning – we will take you to the longest Archaeological Site in Britain (the Thames) and you will get a chance to field walk to see what our ancestors left behind. You will also see and learn from actual Archaeological artefacts in the department (for handling) and in The British Museum (on display).

This week will give you the practical and theoretical tools needed to explore the past and to recreate a small part of it for yourself!

**Required A level subjects:** No specific subjects

For further information and other qualifications, please visit our website:

<http://www.ucl.ac.uk/prospective-students/undergraduate/degrees/archaeology-bsc/2019>