What is Summer Challenge?

Summer Challenge is a set of academic evening courses for Year 12 students. The courses give a realistic taste of university study, and allow you to explore a subject that interests you through the completion of a personal research project. Summer Challenge develops independent research, academic writing and presentation skills that are essential for university. It also provides impressive material to discuss in UCAS personal statements.

Courses run for six weeks in June and July 2016, on Tuesday or Wednesday evenings from 4.30pm to 6.30pm. There is also a mid-programme study skills presentation and an end of programme celebration evening. As well as attending taught evening sessions, Summer Challenge students are expected to work on their research projects in their own time.

There are many courses to choose from in science, engineering, arts, humanities and social sciences disciplines. Every course is developed and taught by UCL postgraduates and academics, with classroom assistance from UCL undergraduate students.

There will be 15 to 20 Year 12 students from different schools on each course, so you will meet new people who share your intellectual interests. All courses are designed to be interactive, enjoyable and challenging, with a focus on group work, problem solving, debates and discussions. We hope that Summer Challenge students will choose to apply to UCL in Year 13, for whichever degree programme is right for them.

The deadline for student applications is Friday 22 April 2016.

The deadline for teacher references is Friday 29 April 2016.
Why should I do summer challenge?

- Learn more about UCL’s wide range of degree programmes: explore which ones are right for you
- Meet new people who share your interests
- Learn about a subject that interests you in depth, taught by experts
- Develop study skills essential for high achievement in Year 13 and the first year of university: academic writing and referencing, critical analysis, independent research, presentation skills
- Increase your confidence and ability to articulate ideas and opinions
- An impressive academic achievement for your UCAS personal statement

The research project

A key feature of Summer Challenge is that every student must produce a piece of independent academic work. During weeks one and two, your tutor will help you identify a research question from a list of topics, and will help you get started. In week six, you will hand in your academic work and will also deliver a five minute oral presentation on the same topic to your group. Your tutors will send you feedback on your research project by email two weeks later.

What they said!

“The study skills gained from the course in terms of essay writing and presentation skills I can now add to my personal statement.”

“Opened my eyes to new pathways I could take with my life, and helped me get a taste of how life at university might be.”

“The independent element of the research project has definitely made me more confident to collect my own research.”

Summer Challenge 2015 students
Which course should I choose?

There are a number of Summer Challenge courses on offer in arts, humanities, sciences, social sciences, and engineering subjects. Summer Challenge is a great opportunity to explore a new subject that you don’t know much about but might find interesting, or to gain more knowledge of a subject you already like. Browse all the course descriptions before choosing: you might find a course that is perfect for you in a subject area you had never considered before. Many Summer Challenge courses are interdisciplinary, and will relate to several different UCL degree programmes. We’ve suggested courses to suit different academic and career interests in the following boxes.

I’m interested in arts, humanities or social sciences subjects

Look at *Myths to Movies*, *Fine Art*, *London in Literature*, *Cultural London*, *Justice in the Aftermath of Atrocity*, and *Revolution and Resistance*. *Myths to Movies* would be a good choice if you are interested in applying for History or Classics. *Cultural London* would be great if you’re interested in Anthropology. *Justice in the Aftermath of Atrocity* would be a good choice for anyone interested in Politics, PPE, Law, History, or East European Studies. *The Nature of Knowledge* might be for you if you like PPE or Philosophy. *The London in Literature* course is designed for applicants interested in the UCL BA in English Literature, but would also work well for students interested in History.
I’m interested in STEM (science, technology, engineering or maths) subjects

Look at our Engineering Solutions from Nature, Games, Strategy and Machines, World Development, Deep Earth, Science and Society, and Biodiversity courses. If you aren’t yet exactly sure which STEM subject you want to study at university, The Engineering Solutions from Nature course is primarily focused on Chemical Engineering but will still be useful for students considering other Engineering degree programmes. The Games, Strategy and Machines and World Development courses will be of interest to students who like Mathematics and Statistics as well as students in Computer Science.

I’m interested in a career in medicine or another healthcare profession

If you plan to apply for UCL’s MBBS degree programme in Medicine, apply for Doctor’s Dilemmas as your first choice and opt for The Wiring of Life, What Influences Your Health or Neuroscience: An Introduction to the Brain as your second choice. All of these courses will enable you to pick research projects that relate to medicine and human biology. If you are thinking of becoming a psychologist or another type of healthcare therapist, the Wiring of Life course would be an excellent choice.
I’m interested in Psychology

Look at the Neuroscience: An Introduction to the Brain course – this would be good preparation for applying for Psychology, Neuroscience and also for UCL’s BSc in Psychology and Language Science. This is a fascinating, vocational degree that can lead to a range of healthcare careers.

www.ucl.ac.uk/prospective-students/undergraduate-study/degrees/ubpsyalan05

I enjoy both science and humanities and can’t decide between them; or, I am unsure what I want to study at university and would like to explore various topics to help me decide

If this applies to you, consider an interdisciplinary course that will allow you to explore different academic disciplines in both sciences and humanities, and which will give you lots of freedom in choosing a research topic. Look in particular at Science and Society, Cultural London, and What Influences Your Health?

Also, consider whether UCL’s innovative interdisciplinary degree programme, the BASC in Arts and Sciences could be a good UCAS option for you.

www.ucl.ac.uk/prospective-students/undergraduate-study/degrees/ubbascsing05
Deadlines and course dates

The deadline for student applications is Friday 22 April 2016.

The deadline for teacher references is Friday 29 April 2016.

We will send our decisions and any enrolment materials in mid-May.

Reading week and study skills evening

Tuesday 5 July 2016 from 1600 – 1830
Wednesday 6 July 2016 from 1600 – 1830

There are no Summer Challenge taught seminars on 5-6 July: this is a reading week to allow students more time to work on their independent projects.

We will run an optional study skills presentation on Tuesday 5 and Wednesday 6 July 2016 from 1600 – 1830. This session is for any Summer Challenge students who want to attend and will cover academic referencing, common problems with spelling and grammar, academic writing style and tips for essay planning.

Celebration events

Tuesday 26 July and Wednesday 27 July 2016 from 1830 – 1930

The final Summer Challenge sessions will be followed by a celebration event where you will receive a certificate of attendance. We will also give advice on the next steps in preparing for UCAS applications. You are welcome to invite your family/guardian to this event.

The deadline for teacher references is Friday 29 April 2016. The deadline for student applications is Friday 22 April 2016.
Course dates

All Summer Challenge courses run on Tuesday or Wednesday evenings in June and July. The registration time for all courses is 1600 – 1625 for all courses; all taught sessions run from 1630 – 1830 every week.

Tuesday evening courses:
14, 21 & 28 June and 5, 12, 19 & 26 July

- Doctor’s dilemmas
- Fine art: drawing upon observation
- Engineering solutions from nature
- Games strategy and machines
- London in literature
- Neuroscience: an introduction to the brain
- What influences your health?
- Justice in the aftermath of atrocity
- The nature of knowledge: empiricist theories of knowledge
- The deep earth

Wednesday evening courses:
15, 22 & 29 June and 6, 13, 20 & 27 July

- Doctor’s dilemmas
- Myths to movies: reception of classics in the arts
- Science and society: fear vs fascination
- World development: how can statistics help?
- Biodiversity: our place on the planet
- The wiring of life: neuronal signalling in the nervous system
- Revolution and resistance: how protest and dissent have shaped american democracy
- Cultural london: diversity in the city
Biodiversity: our place on the planet

UCL Department of Geography

Humans are just one of 8.7 million species on our planet. Yet, our ability to communicate, problem-solve and build tools has allowed us to dominate almost every continent. But with great power comes great responsibility! The impact made by humans on the planet has caused the extinction rate of all other species to increase to between 1,000 and 10,000 times higher than that which would naturally occur.

So what on earth are we going to do about it? Governments know that addressing both the direct and underlying drivers of biodiversity loss will ultimately require behavioural change by individuals, organizations and governments. This is why the Aichi Biodiversity Target 1, (part of the international Strategic Plan for Biodiversity 2011-2020) suggests that we should create an understanding, awareness and appreciation of the diverse values of biodiversity.

This course will give an overview of what biodiversity is, and how an understanding of the Earth’s past and its systems will allow us to learn to be better guardians in the future. We will take on the challenge laid down in Aichi and the Summer Challenge will culminate with the generation of ideas for actions and change needed to halt biodiversity loss on planet Earth.

Dates

Wednesdays 15, 22 & 29 June and 6, 13, 20 & 27 July

Entry requirements and notes

This course would suit students interested in any of these UCL degree programmes: Geography (BA & BSc), Environmental Geography, Environmental Geoscience, Biological Sciences, Natural Sciences, Earth Sciences, Geology, Economics and Geography, Geophysics.

UCL’s interdisciplinary science and humanities combination degree programmes, such as Applied Medical Sciences, Arts and Sciences, History and Philosophy of Science, Human Sciences, Natural Sciences or Science and Society.

Your A level or IB subjects and predicted grades must match the entry requirements for one or more of the UCL degree courses above; refer to the online prospectus for details.

You might be interested in this course if you are currently studying Biology, Chemistry, Physics, History, or Philosophy.
Cultural london: diversity in the city

UCL Department of Anthropology

London is a mosaic of different cultures, languages, ethnicities, and religions, a ‘world city’ that feeds off its unique differences. How can we understand this diversity? How do we study the multiple lives, voices, and histories that continuously make and remake London? And how can we develop fresh ideas and cutting-edge analyses of the complexity of human life through the study of London?

This course delves into London’s radical diversity to make you think critically about key contemporary topics such as culture, language, society, inequality, change, migration, identity and belonging through the unique methods and theories of anthropology. Anthropology is the comparative study of the ways in which people live in different social and cultural settings across the globe. It aims to broaden our understanding of what it is to be human: what unites us as human beings, as well as what makes us so diverse. In this course, we’ll be discovering London through anthropology, and anthropology through London. Embark on a cultural rollercoaster across London and learn to think differently about human life!

Entry requirements and notes

This course would suit students interested in any of these UCL degree programmes: Anthropology, Geography, Human Sciences, Urban Studies, Political Science, Social Sciences.

Your A Level or IB subjects and predicted grades must match the entry requirements for one or more of the UCL degree courses above; refer to the online prospectus for details.

You might be interested in this course if you are currently studying Anthropology, History, Geography, Sociology, Biology, English, Psychology, or Religious Studies.

Dates

Wednesdays 15, 22 & 29 June and 6, 13, 20 & 27 July
Drawing upon observation

Slade School of Fine Art

Drawing from observation has been an age old concern that has stimulated the imagination of many artists throughout history. If you are a budding artist, this 6-week course offers a rich starting point to explore some fundamental concerns of perceptual drawing.

The course introduces the history and the varied traditions of working from observation and includes five intensive drawing sessions with weekly discussion relating to studio practice and theory. We will conclude with student presentations of work, feedback and evaluation. Through a series of subjects and topics – Line & Tone, Form & Space, Measuring Methods, Scale & Proportion, Composition, Balance & Symmetry – students will learn to understand ‘how we see’, and develop confidence in exploring the nature of drawing. You will also be introduced to a number of drawing materials and learn how crucial they can be in the execution of a work. The course explores a diverse set of approaches and strategies that will stimulate debate and engender an expanded sense of the possibilities of working from direct observation.

The general structure of the course will not dominate independent thinking: acknowledgement of the diversity of requirements is paramount. The classes take part in the unique studios of the Slade.

Dates
Tuesdays 14, 21 & 28 June and 5, 12, 19 & 26 July

Entry requirements and notes

This course would suit students interested in any of these UCL degree programmes: BA Fine Art, BFA Fine Art.

Your A Level or IB subjects and predicted grades must match the entry requirements for one or more of the UCL degree courses above; refer to the online prospectus for details.

You might be interested in this course if you are currently studying Art, Graphic Design, Photography, Design and Technology, or Textiles.
Justice in the aftermath of atrocity

UCL School of Slavonic and East European Studies

How can a country or region best achieve justice in transition from violence, such as genocide or ethnic cleansing? Should all perpetrators be held accountable? Should the state pay reparations? Should the response involve domestic or international war crimes trials, if any? And most importantly, will these efforts help the society come to terms with its dark past in order to reconcile or not?

This course will deal with the fundamental question of how to achieve justice in the face of atrocity. Using the case study of the former Yugoslavia, but also making connections to past and present conflicts around the world, this Summer Challenge will explore how societies recover from mass breaches of human rights. The course will discuss how the fields of political science, law and history, among others, can help us better analyse these questions and lead to practical solutions. Students will gain an understanding of how complex these situations are by trying to design such projects themselves, whilst also gaining an understanding of the historical specificities of the Yugoslav wars.

Dates
Tuesdays 14, 21 & 28 June and 5, 12, 19 & 26 July 2016

Entry requirements and notes

This course would suit students interested in any of these UCL degree programmes: History, Politics and Economics; Philosophy, Politics and Economics; Politics and East European Studies, Russian and History, Law, Political Science and International Relations, History.

Your A Level or IB subjects and predicted grades must match the entry requirements for one or more of the UCL degree courses above; refer to the online prospectus for details.

You might be interested in this course if you are currently studying, History, Classical Civilisation, Law, English, Sociology, Philosophy.
London in literature

UCL Department of English

What is London? Is it one city or a collection of boroughs? Are its boundaries marked by rivers, train stations (as in the nineteenth century) or the M25? Is it defined by politicians in Westminster, bankers in the City, or estates in the East End? Is it utopia or dystopia? London is a real space we all live in, but is it also an imagined space – one that exists because we think about it in a particular way? Literature reflects and creates the ways we think about the world around us. So how does literature both reflect and create London?

This course is designed to make you think about the city as it influenced and inspired by authors, poets and playwrights across the centuries from Shakespeare to the present day.

Entry requirements and notes

This course would suit students interested in any of these UCL degree programmes: English Language and Literature, History, Film Studies, Comparative Literature, Urban Studies.

Your A Level or IB subjects and predicted grades must match the entry requirements for one or more of the UCL degree courses above; refer to the online prospectus for details.

You might be interested in this course if you are currently studying English, History, Geography, Drama and Theatre Studies, Archaeology, or Anthropology.

Dates

Tuesdays 14, 21 & 28 June and 5, 12, 19 & 26 July 2016
Myths to movies: reception of classics in the arts

UCL Department of Greek and Latin

From modern film adaptations of Homeric epics to Roman comedy, from Greek mythology to Renaissance art, this course looks at how classical story telling has influenced the arts over millennia. This Summer Challenge will include taster lectures, seminar discussions, role plays, film screenings and a visit to the Warburg Institute – the world’s leading institute for the study of cultural history and the role of images in culture.

Entry requirements and notes

This course would suit students interested in any of these UCL degree programmes: Classics, Ancient World Studies, Latin with Greek/Greek with Latin.

Your A Level or IB subjects and predicted grades must match the entry requirements for one or more of the UCL degree courses above; refer to the online prospectus for details.

You might be interested in this course if you are currently studying Classical Civilisation, History, English, Drama and Theatre Studies, Music, Greek or Latin.
The nature of knowledge: empiricist theories of knowledge

UCL Department of Philosophy

What can I know for sure? What can I be certain about? Can I trust what I see, hear, touch, taste and smell to be a true reflection of reality? How does perception work? Can any claim to knowledge ultimately be justified?

This course will introduce and explore the ideas of the main figures in the tradition of Empiricism, the theory that all knowledge comes from our sensory experience. We will look at the work of British philosophers such as Locke’s Indirect Realism, Berkeley’s Idealism, Hume’s Scepticism, and Mill’s Phenomenalism.

We will explore key works within the tradition, identifying and analysing core arguments. In doing so, we will explore the motivations for holding their views, and show how these motivations relate to the arguments that they give: for example, Locke’s belief that there are no innate ideas, or Hume’s belief that the mental copies the physical. The idea is to firstly seek to appreciate and understand these thinkers and their ideas in their own contexts, and secondly to understand what, if anything, they can contribute to the ongoing philosophical enterprise.

This course will teach you the vital skills of analysis, critical thinking and building an argument, essential for any undergraduate degree.

Dates
Tuesdays 14, 21 & 28 June and 5, 12, 19 & 26 July 2016

Entry requirements and notes

This course would suit students interested in any of these UCL degree programmes: PPE, Philosophy, Philosophy and History of Art, History and Philosophy of Science, Philosophy and Economics, Philosophy and Greek.

Your A Level or IB subjects and predicted grades must match the entry requirements for one or more of the UCL degree courses above; refer to the online prospectus for details.

You might be interested in this course if you are currently studying Philosophy and Ethics, Religious Studies, Psychology, English Literature, Classics, Sociology, Maths, Modern Languages, or Economics.
Revolution and resistance: how protest and dissent have shaped American democracy

The United States began with a revolution and the right to protest is at the core of U.S. citizenship. Americans have always organised and demonstrated in pursuit of a more perfect freedom.

Historically, however, various dissenting groups have advanced different, sometimes conflicting, social and political agendas. Not all protest movements have been embraced by mainstream society. Nevertheless, certain protestors have fundamentally altered the meaning of liberty and justice in the United States and shaped what it means to be an American citizen today.

This course covers the length of U.S. history to explore how different protest movements, from the 1775 Revolution to Occupy Wall Street in 2011, have influenced ideas about the meaning of justice and democracy in America. We will look at the strategies of various dissenting groups in relation to their historical contexts and evaluate their effectiveness. We will also explore how the values and aspirations of certain movements evolved over time and consider how the legacies of protest movements continue to influence American society today.

Dates
Wednesdays 15, 22 & 29 June and 6, 13, 20 & 27 July 2016

Entry requirements and notes
This course would suit students interested in any of these UCL degree programmes: History, History Politics and Economics, History with a European Language, History and Jewish Studies, Ancient History, History and Philosophy of Science.

Your A Level or IB subjects and predicted grades must match the entry requirements for one or more of the UCL degree courses above; refer to the online prospectus for details.

You might be interested in this course if you are currently studying History, Philosophy and Ethics, Law, Government and Politics, Sociology, or English.
Doctor’s dilemmas

UCL Medical School

A critically ill 14 year old girl refuses a life-saving operation. A man with a painful, disabling and debilitating chronic condition asks the doctor to help end his life. A pregnant woman requests an abortion because the foetus is female. You are the doctor on duty – what would you do? These are examples of the sort of ethical challenges doctors face. They often seek the help of their colleagues – other doctors as well as medico-legal lawyers, ethicists and scholars. Perhaps, one day, you might be one of these people.

Over six sessions this course will introduce you to a range of relevant ethical challenges and controversies in the medical world and will provide you with the opportunity to engage with important ethical issues such as organ donation, treating children and young people, and euthanasia. Drawing on real-life cases reported in the media, this course will help you develop your critical thinking skills and your ability to reflect on personal and professional values through discussion and debate. The course will also help prepare you for application to higher education by developing your essay writing skills and interview skills.

Entry requirements and notes
This course would suit students interested in any of these UCL degree programmes: Medicine, Philosophy of Science, Science and Society, Applied Medical Science, Anthropology.

Your A level or IB subjects and predicted grades must match the entry requirements for one or more of the UCL degree courses above; refer to the online prospectus for details.

You might be interested in this course if you are currently studying Biology, Chemistry, Mathematics, Psychology or Philosophy.

Dates

**Tuesdays** 14, 21 & 28 June and 5, 12, 19 & 26 July 2016

**Wednesdays** 15, 22 & 29 June and 6, 13, 20 & 27 July 2016
Neuroscience: an introduction to the brain

UCL Division of Biosciences

Neuroscience is the scientific field that aims to understand the most complex object we know: the brain. How we behave, think and feel depends on the structure and chemistry of our brains but it is also the root of crippling disorders such as Parkinson’s, depression and schizophrenia.

This course covers a variety of topics in Neuroscience and aims to synthesise the most up-to-date research from Anatomy, Pharmacology, Cell Biology, and Brain Imaging to produce a rounded overview of our current understanding of the brain and its disorders. Each week you will focus on different areas of the brain, and a practical session will allow you to get up close and personal with real human brains.

Dates
Tuesdays 14, 21 & 28 June and 5, 12, 19 & 26 July 2016

Entry requirements and notes

This course would suit students interested in any of these UCL degree programmes: Neuroscience, Pharmacology, Biological Sciences, Biomedical Sciences, Biochemistry, Psychology.

Your A Level or IB subjects and predicted grades must match the entry requirements for one or more of the UCL degree courses above; refer to the online prospectus for details.

You might be interested in this course if you are currently studying Psychology, Biology, Chemistry, or Mathematics.
The wiring of life: neuronal signalling in the nervous system

UCL School of Pharmacy

The human nervous system is a marvellous, finely tuned network of neurons that lies at the centre of everything we do. Without it, we would not be able to move, communicate, eat, breathe... live. It is of no surprise then that a single error within this system can lead to a multitude of neurological disorders.

This course is aimed at students interested in cell biology and who are curious about the minute aspects of the nervous system.

An initial class on how neurons communicate via electrical and chemical signals will introduce key terminology and concepts such as membrane potential, action potential, synapses, ion flow and receptors. You will then focus on individual ion channel families and their role in neuronal signalling so as to gain a close-up, molecular understanding of the human nervous system.

By exploring ion channel function and delving into the intricate process of synaptic transmission, you will come to see how the malfunction of neuronal players can lead to a wide range of disorders. Moreover, you will have the opportunity to watch a live electrophysiology experiment and get a glimpse of how researchers study neuron communication.

Dates
Wednesdays 15, 22 & 29 June and 6, 13, 20 & 27 July 2016

Entry requirements and notes

This course would suit students interested in any of these UCL degree programmes: Neuroscience, Applied Medical Sciences, Pharmacology, Pharmacy, Biological Sciences, Biomedical Sciences, Natural Sciences.

Your A Level or IB subjects and predicted grades must match the entry requirements for one or more of the UCL degree courses above; refer to the online prospectus for details.

You might be interested in this course if you are currently studying Biology, Chemistry, Physics, Psychology, or Mathematics.
What influences your health?

What do we mean when we talk about “health”? Health is not only the absence of disease or morbidity but also a state of complete physical, mental and social well-being. There are many factors that combine together to impact on your health, including the environment you live in, your genes, your diet, and the amount of physical activity you undertake. As the world changes, technology develops and medical knowledge advances, these factors change too.

Population Health explores the concept of health around the world, from childbirth to old age, and asks two key questions: how do we keep people healthier for longer and how do we ensure that health gains are shared fairly in the UK and across the world?

This course will focus on the different determinants that can lead to health and aims to synthesise the most up-to-date research of how these determinants affect your health and how they can be studied in order to prevent diseases. In a practical session, you will have the chance to experience one of the ways current undergraduates approach the subject by creating maps to explore the effect of the food environment on health.

Entry requirements and notes

This course would suit students interested in any of these UCL degree programmes: Population Health, Medicine, Geography, Applied Medical Sciences, Biological Sciences, Biomedical Sciences.

Your A Level or IB subjects and predicted grades must match the entry requirements for one or more of the UCL degree courses above; refer to the online prospectus for details.

You might be interested in this course if you are currently studying Biology, Chemistry, Physics, Mathematics, Statistics, Economics, Geography, or Sociology.

Dates

Tuesdays 14, 21 & 28 June and 5, 12, 19 & 26 July 2016
The deep earth

UCL Department of Earth Sciences

Geology is the science, history and understanding of the dynamic planet we inhabit today. The Earth has evolved over a period of 4.5 billion years to its current state of calm blue oceans, terrestrial forests and majestic mountains - relics of its exciting turbulent developments are found on the surface and deep within the Earth.

Though Earth’s evolution appears to have stopped, it is changing every second of every day. Natural forces rock and redefine the planet daily from earthquakes to volcanic eruptions; Earth is anything but static.

Earth scientists investigate the planet through a number of approaches including mineralogy, seismology, mineral physics, geodynamics and magnetism. This Summer Challenge will introduce you to current research taking place in all of these areas giving you an insight into the deep Earth, from crust to core! Practical tasks accompanying lectures will help you to develop a better understanding and visualisation of the composition, structure, dynamics and evolution of the deep Earth.

Entry requirements and notes

This course would suit students interested in any of these UCL degree programmes: Geophysics, Earth Sciences, Geology.

Your A Level or IB subjects and predicted grades must match the entry requirements for one or more of the UCL degree courses above; refer to the online prospectus for details.

You might be interested in this course if you are currently studying Geography, Chemistry, Geology, Physics, Biology, or Environmental Studies.

Dates

Tuesdays 14, 21 & 28 June and 5, 12, 19 & 26 July 2016
Engineering solutions from nature

UCL Department of Chemical Engineering

Nature evolves by adaptation. By studying nature, engineers can find solutions to address the environmental problems our ever-changing world presents. Chemical and Biochemical engineering are evolving disciplines that allow us to learn from nature tricks we can use to change the world for the better! Using some of these tricks and working in small groups you will design reliable processes for obtaining energy via environmentally friendly methods. If your design is feasible, reliable, economical, and environmentally-friendly, you could solve problems that affect millions!

The course is taught by PhD students from UCL’s Chemical Engineering Department, and includes visits to the UCL Institute of Making, the Centre for Nature Inspired Engineering and the Centre for Innovative Manufacturing. The course will be useful and interesting for those interested in engineering degrees at UCL.

Dates
Tuesdays 14, 21 & 28 June and 5, 12, 19 & 26 July 2016

Entry requirements and notes

This course would suit students interested in any of these UCL degree programmes:
Biochemical Engineering, Chemistry, Chemical Engineering, Civil Engineering, Electronic and Electrical Engineering, Environmental Engineering, Mechanical Engineering, Medical Physics.

Your A Level or IB subjects and predicted grades must match the entry requirements for one or more of the UCL degree courses above; refer to the online prospectus for details.

You might be interested in this course if you are currently studying Chemistry, Physics, Biology, Mathematics, Environmental Studies, Geography, or Geology.
Games, strategy and machines

UCL Department of Mathematics

In 1992 the chess supercomputer Deep Blue beat the greatest chess player of all time, Russian Grandmaster Garry Kasparov. Now, machines run much of our world, from betting on the stock market to flying planes.

In this Summer Challenge, you will learn about games and strategies. We will see what strategies we can use to win at games. We will use the theory of games to understand the world and see how it can explain animal behaviour, competing businesses, and even political standoffs. During the course you’ll learn how to program a computer and we will discuss whether a computer could ever really think. You will use these new programming skills and your own strategies to write a program that uses tactics to play Connect 4. In the final session you will pitch your program against the other students in a tournament to see who the ultimate tactician is.

Entry requirements and notes

This course would suit students interested in any of these UCL degree programmes: Maths, Computer Science, Economics, Physics, Engineering, Statistics.

Your A Level or IB subjects and predicted grades must match the entry requirements for one or more of the UCL degree courses above; refer to the online prospectus for details.

You might be interested in this course if you are currently studying Mathematics, Further Mathematics, Statistics, Computer Science, Economics, or Physics.
Science and society: fear vs fascination

UCL Department of Science & Technology Studies

Why do we find things that frighten or disgust us so appealing? Horror movies and TV shows about embarrassing bodies are just the modern manifestations of this cultural phenomenon. Our fascination with corpses and abnormal bodies can be seen as part of a wider concern for our own mortality, as individuals and as a species, that has existed throughout the ages.

Fear vs. Fascination will delve into the depths of Nineteenth Century morbid curiosity, examining the Victorian obsession with Jack the Ripper, Freak Shows, Body Snatchers and Frankenstein’s monster. We will critically analyse and debate a range of cases to understand how and why they excited so much interest whilst inspiring so much fear. Literature, cartoons, posters and museum displays will all become sources of knowledge as we link each fear to the culture and practices of the time.

Meanwhile, we will use these same techniques to assess modern culture, helping us to understand the roots of our own concerns and interests. How much social progress do you think we have made in the last 150 years?

Entry requirements and notes

This course would suit students interested in any of these UCL degree programmes:

Science related degree programmes:
Life Sciences, Brain Sciences, Medicine and Physical Sciences faculties, Humanities and History degrees.

UCL’s interdisciplinary science and humanities combination degree programmes, such as Arts and Sciences, History and Philosophy of Science, Human Sciences, Natural Sciences or Science and Society.

Your A Level or IB subjects and predicted grades must match the entry requirements for one or more of the UCL degree courses above; refer to the online prospectus for details.

You might be interested in this course if you are currently studying Biology, Chemistry, Physics, History, or Philosophy.

Dates

Wednesdays 15, 22 & 29 June and 6, 13, 20 & 27 July 2016
World development: how can statistics help?

UCL Department of Statistical Science

Can you find patterns among chaos? Can you find meaning among apparent discord? How well can you predict the future?

Statistics is our tool in making sense of the noise and confusion that surrounds us daily. Without it, we would be lost in today’s data-driven world. A world without statistics is a world that cannot progress – in medicine through to astronomy through to social science, we rely on statistics to enhance our understanding.

In this summer challenge you will learn practical data skills – and that includes using software to do the hard calculations and produce interesting graphics. You will work in a small group to analyse a dataset looking at social, economic and environmental development across the world, using methods introduced during the summer challenge. It’s even possible that you’ll come across something new – something that the world did not know before!

Your end task is to produce a poster of your findings: can you piece together the evidence from the data to prise out the important messages?

Dates
Wednesdays 15, 22 & 29 June and 6, 13, 20 & 27 July 2016

Entry requirements and notes

This course would suit students interested in any of these UCL degree programmes: Statistical science, Statistics, Economics and Finance, Statistics and Economics, Mathematics.

Your A Level or IB subjects and predicted grades must match the entry requirements for one or more of the UCL degree courses above; refer to the online prospectus for details.

You might be interested in this course if you are currently studying Mathematics, Further Mathematics, Statistics, Economics, Computer Science, or Business Studies.
Selection criteria

Summer Challenge is for Year 12 students attending state schools in or near London. You do not have to attend a school in London, or live in London in order to apply: we will consider applications from students outside London. However, you must be able to travel to the UCL campus (near Euston station) in time for the 4pm registration every week. If you live far away, you may need to arrange special permission to leave your school early on Summer Challenge days.

We will offer a limited number of travel bursaries for students who would otherwise not be able to take part in Summer Challenge. If you are offered a place on Summer Challenge and will need a bursary to help with your travel costs, please email us with the details.

Summer Challenge is selective and unfortunately not every applicant will get a place. We prioritise places for students who match our academic and demographic criteria which are explained in the following paragraphs.

Our academic criteria

Summer Challenge students should be considering applying to UCL in the future. On your application form you will be asked to state which UCL undergraduate degree programmes you are interested in. If you haven’t yet decided which specific degree you want to apply for, you can indicate the general subject areas you are interested in. Your academic profile (your GCSE grades and your A Level or IB subjects and predicted grades) must match the minimum entry requirements for the UCL degree programme(s) you intend to apply for. Please refer to UCL’s online prospectus for guidance on minimum entry requirements for different degree courses.

www.ucl.ac.uk/prospective-students/undergraduate-study/application-and-entry/ug-requirements
**GCSE requirements**

You must match the minimum GCSE requirements for the UCL undergraduate degree programme that you intend to apply for. UCL's minimum entry requirement is grade C or higher in Maths and English Language GCSE. However, for many UCL degrees the requirement will be higher. For example, UCL Psychology requires a grade B in English Language, Maths and two Science GCSEs.

**A level requirements**

If you are taking A Levels, you must be taking three full A Levels and a fourth AS level (or be taking an Extended Project Qualification as an alternative to the fourth AS level). You must be predicted grades in the range ABB to A*A*A (depending on which UCL degree you want to apply for), plus a pass or higher in the additional AS.

You must also be taking A Level subjects that match the entry requirements of the UCL degree programmes you intend to apply for. For example, if you plan to apply for UCL Medicine, you must be taking Biology and Chemistry A Levels.

Refer to UCL’s list of preferred A Levels and individual course profiles for guidance: [www.ucl.ac.uk/prospective-students/undergraduate-study/application-and-entry/alevel-qualifications](http://www.ucl.ac.uk/prospective-students/undergraduate-study/application-and-entry/alevel-qualifications)

**International baccalaureate requirements**

If you are taking the IB, you must be predicted a minimum score of 34 points overall, with a combined score of 16 achieved in three higher level subjects, with no grade lower than 5.

Many UCL degree programmes will require higher predicted scores for the IB, up to 40 points, and your predicted grades must match the IB requirements for your preferred UCL degree programme. For example, if you want to apply for UCL Economics, you will need a predicted score of 39 points, to include 19 points in higher level subjects, including a 7 in Maths and a 6 in Economics if taken.

**BTEC requirements**

We will consider Summer Challenge applications from students taking the BTEC, but it must be the Edexcel Level 3 Extended Diploma (QCF), or Edexcel Level 3 BTEC National Diploma (NQF) with a predicted grade of Distinction, Distinction, Distinction.

You must be interested in applying for a UCL degree course that accepts the BTEC: please be aware that not all UCL degree programme accept the BTEC.

Refer to the link below to see which UCL degree programmes accept the BTEC: [www.ucl.ac.uk/prospective-students/undergraduate-study/application-and-entry/other-qualifications/btec](http://www.ucl.ac.uk/prospective-students/undergraduate-study/application-and-entry/other-qualifications/btec)

If you are a BTEC student and want to apply for Summer Challenge, please email us for advice on your application: [challenge@ucl.ac.uk](mailto:challenge@ucl.ac.uk)
Social demographic criteria

We will only give places to students attending state schools. We will prioritise students who meet several or all of these criteria:

- Students with no family history of higher education participation (this means that neither of your parents or guardians have been to university)
- Students who were eligible for free school meals during secondary school
- Students whose parents or guardians are currently unemployed, or are in lower income or non-professional jobs
- Students who live in neighbourhoods with a lower than average rate of participation in higher education (this is assessed by looking at your postcode)
- Students who are in local authority care or have been in the past (looked-after children)

Application process

Read this brochure carefully, and choose a first and second choice Summer Challenge course. We strongly recommend that you apply for two courses, as this will increase your chance of getting a place. You must be willing to take your second choice course if it is offered to you. Students interested in applying for Medicine at university can apply for the Doctor's Dilemmas course on the Tuesday or the Wednesday, but not for both. As this course will be over-subscribed, we ask that applicants choose a different Summer Challenge course as their second option.

Then look at the UCL undergraduate prospectus to check the entry requirements for the degree course(s) you want to apply for in the future – you will need to enter these choices in the online application form.

Discuss your application with your family and school to check that you will definitely be able to attend all the dates, and find a teacher in your school who can write an academic reference for you. They will be asked to send us your predicted grades and to give some comments about you as a student. You will be asked to give us your teacher’s name and email address so that we can contact them to request the reference. Please note that we will not be able to process your application without a teacher reference.

Then write a personal statement of up to 250 words explaining why you are interested in your chosen Summer Challenge course(s) and why you would be a good Summer Challenge student.
When you are ready, complete the online student application form and add your personal statement. You will need to provide your personal details, contact details, information about your education, and information about your parents’ or guardians’ employment and education history, and a name and email for your teacher reference.

The deadline for student applications is Friday 22 April 2016.

The deadline for teacher references is Friday 29 April 2016.

The application form is available at this link: www.ucl.ac.uk/summerchallenge

You will receive a link for the teacher reference once you have submitted your application. This must be passed on to your teacher.

What happens after summer challenge?

You will be emailed feedback from your tutor on your research project, giving advice on how you can improve your academic work in future.

The UCL Widening Participation team will keep in touch to support you throughout the Year 13 UCAS application process. We will offer personal statement feedback clinics and other activities.

UCL London opportunities scholarship

Students who complete the independent research project on Summer Challenge 2016 and who then receive an offer from UCL will be invited to apply for the UCL London Opportunities Scholarship to receive financial support during their undergraduate degree at UCL. The scholarship will be worth up to £4,000 per year of study.

Summer Challenge students who apply in the 2016–17 UCAS admissions cycle will be sent information on how to apply for the scholarship when they receive an offer from UCL.

https://www.ucl.ac.uk/prospective-students/scholarships/undergraduate/UGAccessAwards

Contact

If you have any questions about Summer Challenge, please contact us:

Summer Challenge team
challenge@ucl.ac.uk
020 3370 1214
@DiscoverUCL
www.ucl.ac.uk/summerchallenge
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