CTY IRELAND

Centre for Academic Talent

Summer 2020

Online Academic Programme

For 12-17 year olds with high academic ability

Session 1: 22nd June – 3rd July

Session 2: 13th July – 24th July

DCU
Ollscoil Chathair
Bhaile Átha Cliath
Dublin City University

Course Information

The Centre for Academic Talent (CAT) was developed to give high ability students access to courses, not ordinarily available in the secondary school setting. Drawn typically from a university curriculum, the courses open up new avenues of learning and opportunities for greater challenge and stimulation than students would be used to at school. Students may also use this as an opportunity to trial run a university course that they may be considering after they leave school. Our courses are fast paced and cover material in more depth and at greater levels of complexity than is usual at post primary school. They are designed to be intellectually stimulating. There are over 30 courses on offer.

Eligibility
The Centre for Academic Talent is for secondary school students aged 12-17 years who have either participated in our Talent Search, and have scored in the top 15% of their age group or have previously taken part in the CTYI Young Students Programme.

Summer Scholars students will be allowed to apply for courses on the 2020 CAT programme, for this set of online classes ONLY.
Students' previous scores will apply for the 2021 Summer Programmes.

Course Structure
Students have two options for engaging with the programme;

Students may take a two week course on either Session 1 or Session 2, but not both. These courses are for 50 hours tuition for two weeks and are made up of 25 hours per week.
                                    OR
Students may take individual subjects per week, which they study intensively for approximately 25 hours. Students may attend just one or two subjects across the 4 weeks on offer - attending a maximum of 2 subjects within the same session. Students cannot apply across both sessions.

Class sizes are small with up to 18 students per class. Classes have an instructor and a teaching assistant. CTYI staff are chosen on the basis of mastery of the subject, enthusiasm and good communication skills.

Course Choices
Applications must be made through the accompanying Eventbrite. Students should think very carefully about their course choices, listing only those courses which they will accept if they do not receive their first choice. The more flexible students can be, the greater their chances of being assigned to a course. Students are assigned to courses on a **first-come, first-served basis.**

Course Allocation
Courses will be assigned on a **first-come, first-served basis** for each course. Students must apply by purchasing a "ticket" through the relevant Eventbrite event page. Applications will be closed for each course when they have reached capacity.

Please note that purchasing a ticket and receiving an order confirmation from Eventbrite automatically means you have secured a place in the class and we will contact you with more details closer to the time.

Note to Returning Students
Please do not assume that because you have participated in CAT previously, you will receive a place on your chosen course. It is very important for you to apply promptly, as courses will be assigned as always, on a **first-come, first-served basis.**

Message from CTYI

We have experienced some unimaginable changes to our lives in 2020 which has forced the CAT Summer Programme to move to an online format. We know for many returning students that this is a cause of great sadness as you may have been looking forward to coming to DCU this summer for the whole year. However we feel that cancelling altogether is not the CTYI way, so we are encouraging you to participate in our classes in an online capacity.

As anyone who has been on this programme previously will know, we are a close community here at CTYI and we hope by offering this modified version of our summer programme that we will be able to recreate a little of the great CTYI atmosphere in your home this year. It's certainly going to be a different experience but we are always willing to take on new challenges and innovations on this programme.

We will retain the high academic standards that has seen over 20,000 people participate in previous programmes and if this is your first CTYI experience then we will try to give you a new academic challenge and hopefully you will get to make some new virtual friends this summer that will become face to face friends for life in years to come.

We will have the same subject experts offering you an introduction to some exciting college courses where you will get to participate in some new learning and research projects and you will hopefully work closely with your classmates in this regard. Outside of class we hope to run a few activities to help you to get to know everyone who is on the course.

We will always look to our students for guidance and we would like to work with you to make this a memorable experience for everyone. We look forward to seeing you (on screen) this year at CTYI

Dr. Colm O'Reilly
CTYI Director

Application Information

Course Fees

1 week courses - €250*
2 week courses - €500*

* excluding Eventbrite booking fee

Financial Aid
We have allocated all financial aid for the programme already.
We are unfortunately unable to process any new financial aid applications at this time.

DEIS Access Scheme
If you have previously availed of a DCU Access Scholarship for CTYI please DO NOT APPLY through Eventbrite, contact **ruth.lally@dcu.ie.**

Students will not be permitted to attend classes until all fees have been paid.

Apply for 2 Week Course Options here;

https://www.eventbrite.ie/e/2020-cat-online-academic-programme-two-week-courses-tickets-107068163760

Apply for 1 Week Course Options here;

https://www.eventbrite.ie/e/2020-cat-online-academic-programme-one-week-courses-tickets-107090015118

Application Process

1 - *Read the contents of this brochure carefully.*

2 - *Using the relevant Eventbrite links, purchase a "ticket" for your preferred course. Course places are limited so if a course has reached capacity it will no longer be available - in this case please try another course.*

Please make your purchase carefully, as refunds cannot be made for tickets purchased in error or in duplicate.

3 - *Once course fees have been fully paid, you will be sent all relevant course information, before the 19th of June.*

Please note we cannot process refunds for course tickets purchased in error or in duplicate.

2 Week Course Options

SESSION 1 :   22nd June - 3rd July

Law

Medicine

Psychology

SESSION 2 :   13th July - 24th July

Medicine

Psychology

Course Content

Law

The Law course will consist of a combination of 1 week modules in;
Session 1 ; High Profile Court Cases, Moot Court

Medicine

The Medicine course will consist of a combination of 1 week modules in;
Session 1 ; Medical Mysteries , Viruses & Immunology

Session 2 ; The Major Organs, Epidemics & Pandemics - Managing Public Health

Psychology

The Psychology course will consist of a combination of 1 week modules in;
Session 1; Social Psychology, Forensic Psychology

Session 2; Sport Psychology for Players & Spectators, Psychology and Ethics

Detailed course descriptions of these modules are in the following section.

Apply for 2 Week Course Options here;

https://www.eventbrite.ie/e/2020-cat-online-academic-programme-two-week-courses-tickets-107068163760

Students cannot attend both a 2 week course and any additional 1 week courses.

1 Week Course Options Session One

1 Week Course Options Session Two

SESSION 1 :   22nd June - 3rd July

SESSION 2 :   13th July - 24th July

Week 1:   22nd - 26th June

- Criminology
- Maths Experience
- Medical Mysteries
- Moot Court
- Popular Fiction
- Social Psychology

Week 2:   29th - 3rd July

- Engineering - the Future of Technology
- Flash Fiction
- Forensic Psychology
- Game Theory
- High Profile Court Cases
- Neuroscience
- Viruses & Immunology

Week 1:   13th - 17th July

- Book vs. Film
- Sport Psychology for Players & Spectators
- Supermoons & Supernovas: Astronomy Everyone Should Know
- The Major Organs
- Writing for Theatre

Week 2:   20th - 24th July

- Comedy Writing
- Criminology
- Epidemics & Pandemics - Managing Public Health
- Fight or Flight - Problem Solving Psychology
- Psychology and Ethics

Apply for 1 Week Course Options here;

https://www.eventbrite.ie/e/2020-cat-online-academic-programme-one-week-courses-tickets-107090015118

Students may take part in one course per week on the same session ie. a maximum of 2 courses, within EITHER Session 1 OR Session 2. Students cannot attend both sessions.

Daily Schedule

10 am - 4 pm

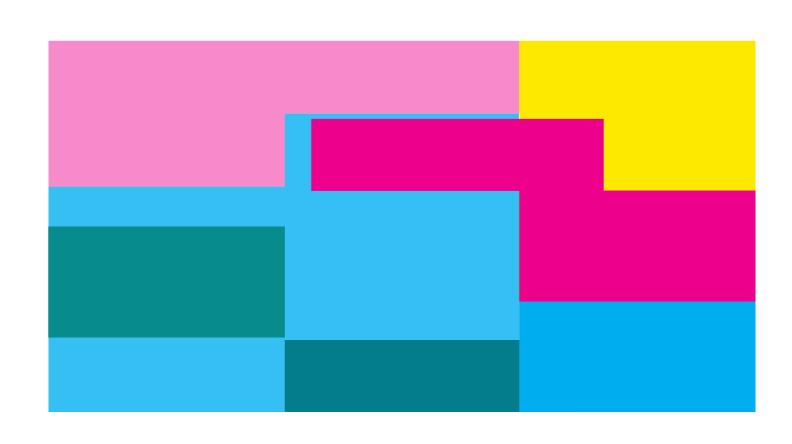| **10.00 - 11.00**	**11.00 - 12.30**	**12.30 - 1.30**	**1.30 - 2.30**	**2.30 - 3.30**	**3.30 - 4.00**
Morning Lecture *Students join online classes*	*Assignment Work* *Instructors accessible on Google Hangouts for questions*	*Lunch Break*	*Afternoon Lecture* *Students join online classes*	*Assignment Work* *Instructors accessible on Google Hangouts for questions*	*End of Day Lecture* *Students join online classes*

4.15 - 5.45

Optional Social Activity (sign-ups sent weekly)

Students are in class for five hours each day. Class takes place between 10.00am and 4.00pm, with an hour for lunch.

Between 4.15pm and 5.45pm students will have the opportunity to take part in recreational, social activities organised and run by members of our residential team on Zoom. These may include quizzes, remote yoga classes, CTYI Ted talks, book clubs and "appreciations". Activities will be set at the beginning of each week and students will be sent sign-up forms to list preferences. Attendance will be monitored to ensure only registered students are present.

These activities will be optional to attend, at no extra cost. We hope that these activities will offer a slice of life of CTYI, in lieu of the usual social activities held as part of the programme!

Course Descriptions

Book vs Film

Why are some stories retold time and time again? Is the book always better than the film? Is there a difference between adaptation and appropriation? Adaptations frequently arouse powerful responses from audiences and critics alike, generating stimulating discussion surrounding revision, fidelity, and intertextuality. In this course, we will look at the complex process of adaptation from text to screen and back again. We will also consider the influence of genre, authorship, and historical and cultural contexts. Students will also tackle the creative process head on, and attempt translations of their own. Are you up to the challenge?

Comedy Writing

What makes a comedy? And how do you begin to create one? In this course, students will learn the essentials of comedy, and how it has become what it is today. From The Merchant of Venice to The Good Place, comedy has both changed utterly and remained the same. The class will cover theory, writing, and performance, as students develop their own comic voice and learn how to harness it to tell a great story. The course will be balanced equally between analysis and creation, to equip students with the necessary tools to understand and work within this complex genre.

Engineering - the Future of Technology

In this course we will cover a broad range of different areas in Engineering. The subject covers a fantastic selection of topics and while we will look at some classical examples, like civil and structural, we will mainly focus on the future of engineering and some of the incredible advances being made by humans. These will cover areas of space exploration, medical engineering, computers, technology and energy. Parallel to this we will always consider relevant issues that it is important for all you future engineers to know! Such as environmental awareness, using renewable resources and looking at human impact. As engineers come from all different backgrounds we will be touching on areas such as physics, design and much more! To get a better understanding, the course will incorporate different types of learning, theory will be complemented by hands-on work and projects and students will be given the opportunity to explore their ideas together.

Epidemics & Pandemics - Managing Public Health

Have you ever wondered what a day in the life at the Centre of Disease Control is like? How do experts manage global outbreaks of infectious disease or how do countries protect against biological warfare? Are you fascinated by historical global pandemics caused by the black plague or smallpox? Are you curious about virulence evolution in microorganisms and how scientists and medics future-proof against them? If so, then this is the course for you. Public Health is the science and art of preventing disease, prolonging life and promoting health at a population level, in this course we will explore the process of planning for, preventing and managing epidemics and pandemics globally.

Fight or Flight - Problem Solving Psychology

"The aggressive person fights. The passive one runs away. But the assertive person stands ground, assesses the situation, adapts, and acts with purpose and passion. " - Charles F Glassman

This course will introduce students to the psychology behind our brain's response to challenge and decision. This higher order cognitive process is how we search and find solutions to a problem. Focusing on thought processes and how they develop, students will look at how things like emotion and certain brain injuries can affect problem solving ability. So whether it's trial and error, designing algorithms or an heuristic problem solving framework, this course will be of interest to any student who likes thinking about how people think!

Flash Fiction

"For sale: baby shoes, never worn." - Ernest Hemingway

Flash fiction is the art of the very short story, ranging from just 6 words to 1,500 words at the maximum. Flash fiction boils storytelling down to its essence, and is a great place for both novices to get started and practiced writers to refine their skills. We will study key topics such as character, plot, conflict, dialogue, and word choice, and try our hand at a range of short forms from twitterature to two-sentence horror stories. By challenging ourselves to word constraints, we will learn how to craft tight and focused pieces, with smart surprises, powerful hooks, and profound truths. Two golden rules of writing are 'Always leave the reading wanting more' and 'Edit, edit, edit'. Flash fiction will show you exactly how to do that!

Forensic Psychology

When the justice system meets psychology, you enter the corridors of forensic psychology. Criminal profiling, which began in the 60s is one aspect of this very niche area. Different from criminology, forensic psychologists study things like whether a defendant is fit to stand trial, or whether they were sane at the time of carrying out crime. Focusing on things like psychological assessment, personality assessments, psychological healthcare in prisons, assisting police forces with counseling and crisis management. Research in the area focuses on crime trends, psychological therapies, techniques in jury selection. If you enjoyed a previous course in law or criminology, or you have a keen interest in psychology, then this course is for you.

Game Theory

Game theory is the study of strategic interactions. This course is about asking what happens when people or things with different incentives or motivations interact against one another to achieve their own best outcome. It has become the under pinning of evolutionary theory, economics, business processes, international relations, and is the subject of major motion pictures, like 'A Beautiful Mind'. In this course we will discover the laws underpinning every game and study specific examples of different types of games taken using examples from literature, the movies, board games, economics, molecular biology, international politics, business studies, dating, game shows, government funding opportunities and, of all things, fuel injection mechanisms in cars and the songs of the Dunes in the Sahel. Students will learn to develop their own games and study the development of others. No mathematical knowledge is needed to take the course as all concepts will be developed as we go in a fun and intuitive way, focusing on the ideas and their implications rather than the technical aspects of the theory. Students who care about understanding their world should enjoy this course.

High Profile Court Cases
This course delves into interesting high-profile court cases that shaped the Irish legal landscape and captured the public's attention. Students will gain an enhanced understanding of the principles of law illustrated in these cases by partaking in lectures, legal skills workshops, independent learning exercises and group work. Classes will be pitched at the format, tone and academic level of a university level programme. Students will be encouraged to read case law and learn about legal principles through an exploration of interesting and shocking legal cases. Students will develop legal skills including case analysis, examination skills and group work skills.

The Major Organs
Dive into the human body, learn about the processed going on inside us every day that keep us alive. The well-tuned systems and how they all work together. How we maintain balance and what happens when that goes wrong. Look at the extremes of human function in sports medicine. Study about the brain and how it regulated everything from breathing to sleep. Dreams and personality. We will look at how our understanding of how organs such as the heart functioned as changed throughout history. Understand the body and how it varies better then ever.

Maths Experience
Why does a coffee cup look the same as a donut? Are some infinities truly bigger than others? What problems are too difficult for a computer to solve? Mathematics is the abstract study of structure, space, quantity, and philosophy - and not only a means to gain answers, but a system to make questions precise too. In this course we will investigate statements such as these by exploring the shores of modern mathematics and some of its component disciplines: logic, geometry, number theory, topology. We will find an astounding number of applications to game theory, cryptography, computer science and more.

Medical Mysteries
Learn about one of the oldest professions and the things that still puzzle doctors today. Ranging from small things like what causes hiccups to the discoveries we continue to learn about one of the most complex structures in the universe, the human mind. Learn about our genes, how they are passed on and the future of genetic medicine. Learn about the growth of fetuses against all odds. Have a look at cases of the rare, the wonderful and the extreme as we try to solve the riddles of the human body.

Moot Court
Moot court is one of the most important pieces of a solicitor or barrister's legal education providing an exciting opportunity to experience law in action in a simulated courtroom setting. Students will learn how to advocate on behalf of their client, or against, as members of the prosecution, and act as their parties' legal representatives in hypothetical cases. Students will learn how to prepare court documents, present and speak in a court of law, argue the law for/against their client, jury persuasion techniques, negotiation tactics, the examination of evidence and the art of direct and cross examination of witnesses and defendants on the stand. The course will feature a range of interesting areas of law, in a fun, interactive way. It will give students an insight into the life of a legal professional in an exciting and dynamic way, developing their analytical and inquisitive skills to find the best outcome for their client!

Neuroscience
Why do we sleep? How do some people 'smell' colour? Why did the man mistake his wife for a hat? If these and other questions like them fascinate you, then Neuroscience course is for you! Neuroscience touches on many things, such as mechanisms of disease, drug development, sports medicine and psychology. From the basics of cellular biology and neuroanatomy, students will examine the normal function of different areas of the brain and see what happens when these functions break down. This course will also touch on recently developed fields of neuroscience such as stem cell therapies and brain-computer interfaces. The class will be lecture based but enthusiastic discussions are welcome!

Popular Fiction
What makes a work of fiction 'popular'? Why must many popular texts fight to be recognised as 'serious'? What can popular texts tell us about society? And how can we write a bestseller or blockbuster? In this exciting course, we will attempt to answer such questions by exploring a wide range of popular genres such as horror, fantasy, science fiction, romance, and detective fiction, as well as popular forms such as comics, videogames, and animation. We will study recent bestsellers, analyse latest trends, compare various media interpretations, and consider historical developments. Expect to examine the history and mythology behind the fantasy worlds of writers such as JK Rowling and JRR Tolkien, investigate the psychosocial roots of legendary creatures and iconic monsters, psychoanalyse the supervillains of Marvel and DC, discuss the twists and turns of gripping mystery plots, and even consider the accuracy of the science behind sci-fi tropes from time travel to cyborgisation. Learning key writing skills, students will develop their own worlds, characters, dialogue and plots, and be encouraged to challenge contemporary tropes. With a focus on both critical analysis and creative writing, this course will uncover the important place of popular fiction within modern culture, and attempt to answer the question; can Popular Fiction give us the answer to Life, the Universe and Everything?

Psychology and Ethics
Psychology is the study of the mind and behaviour. In this course we will learn about the main disciplines in the study of psychology to see if we can answer big questions such as what makes humans unique, are our personalities a result of nature or nurture, and whether humans are fundamentally good.
Psychology is a new science and its ethical practise has developed rapidly in the last 60 years. We will look at gobsmacking studies such as the Stanford Prison experiment that highlighted the ethical considerations of studying humans and analyse how Psychology has improved its research methods.

Social Psychology
If psychology is the study of human behaviour, social psychology looks at that behaviour in action in the world. This course seeks to impart a detailed understanding of the burgeoning field of social psychology, focusing specifically on the applied use of psychology in the fields of politics, advertising and healthcare.
Students will be introduced to psychological theory of attitudes, attractiveness, prejudice, groups and teams, attribution, self-identity and helping behaviour. How do our attitudes affect our behaviour? Can we ever truly overcome prejudice? What is the best way to address racial tension in schools? How important are a candidate's looks in a political campaign? How do juries behave, what influences them, and why? This wide-ranging course will use case studies from Irish advertising campaigns, the healthcare system, recent Dáil elections and the 2008 American presidential campaign to deepen students' understanding of the structure and function of human behaviour and its effects in the world

Terms & Conditions

CTYI reserves the right to cancel or alter any course, if due to unforeseen circumstances the course cannot be run economically or efficiently.

Places are allocated on a first come, first served basis.

Fees are non-transferable for online courses that have been offered.

Summer Scholars students will be allowed to apply for courses on the 2020 CAT programme, for this set of online classes ONLY.

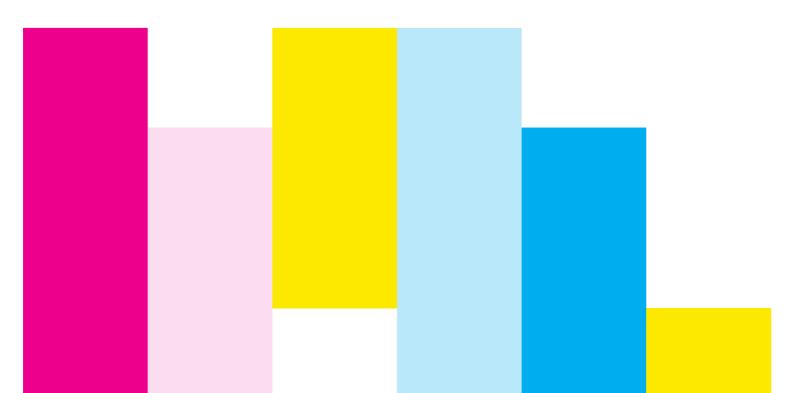Students' previous scores will apply for the 2021 Summer Programmes.

Students who have previously applied for the 2020 Summer Programme will not be guaranteed a place on the courses available, or given priority as these courses are being offered through a separate application system.

Please make your purchase carefully, as refunds cannot be made for tickets purchased in error or in duplicate.

Refunds are not given if the student withdraws from the programme having been offered a place on one of their course choices.

Refunds are only provided where a course does not take place.

No refunds will be made to students dismissed from the programme.

Discipline

Students may be **immediately dismissed** from the course for any of the following reasons:**
- Bullying, in person or via social media
- Violating or putting at risk the safety and well-being of any person
- Threatening or intimidating behaviour toward staff or students
- Taking a picture, video or audio recording of a staff member or student without their express permission, including screenshots

Students may be **subject to dismissal** from the course for any of the following reasons (on a case by case basis):**
- Punctuality (applicable to all aspects of the course)
- Bullying, in person or via social media
- Not attending satisfactorily to their academic work, including repeated absence from class
- Abusive language in verbal or written form to students or staff members
- Inappropriate behaviour online
- Using computing facilities for purposes other than assigned course work

**Or for any other reasons which in the opinion of the director are of a sufficiently serious nature to warrant dismissal from the programme.

In Addition
- Students may not contact a staff member on any social network unless the account is a registered CTYI one.
- Students may not share Zoom class codes or activity codes with any other person not registered for the course.

Students will be sent further guidelines related to their conduct in class before the beginning of the programme.

Important to Note
Students who violate programme rules are subject to the disciplinary actions outlined above. No refunds will be made to students dismissed from the programme. Details on CTYI Data Protection and Equality policies can be found on our website
ww.dcu.ie/ctyi/CTYI-Policies

Contact Us

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