Cambridge University - Nanjing
Centre of Technology and Innovation
剑桥大学南京科技创新中心

Summer School in Economics and Data Science

2025

Dates: 4 August - 23 August 2025
Host: Cambridge University Nanjing Centre
Location: Selwyn College, Cambridge University

Welcome Message

On behalf of the Cambridge University – Nanjing Centre of Technology and Innovation (CUNJC), I'm pleased to welcome you to our Summer School in Economics and Data Science.

CUNJC, as Cambridge University's central platform for engagement in China, fosters global research, innovation, and talent development. This Summer School, delivered in partnership with academics from the Faculty of Economics and Selwyn College of the University of Cambridge, strengthens our mission to promote academic and cultural exchanges, building a people-centred technology ecosystem.

Over three transformative weeks, you will embark on an intellectually stimulating journey, beginning with online courses and culminating in an immersive residential experience at Selwyn College. You will explore cutting-edge topics in economics, data science, and their interdisciplinary applications, while gaining insights into industry trends, career opportunities, and personal growth through interactions with experts and peers.

Our curriculum, led by distinguished Cambridge faculty, blends theoretical depth with real-world relevance. This is also a unique chance to experience Cambridge student life - exploring historic libraries, engaging in discussions in iconic courtyards, and dining in the grand College Hall.

With a strong foundation and expanding partnerships, CUNJC is committed to excellence and fostering intellectual growth. We look forward to your participation and the perspectives you will bring to our global community.

Together, let us embrace the spirit of discovery that fuels innovation at Cambridge and beyond!

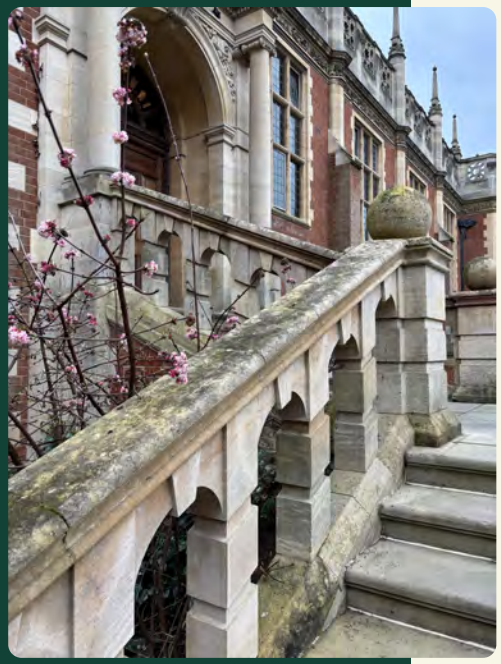
Prof Daping Chu
Academic Director,
Cambridge University - Nanjing Centre of Technology and Innovation

$$\mathcal{I}(\theta) = \mathbb{E}_\theta \left[\left(\frac{\partial}{\partial \theta} \right) \right] f_\theta(X)$$

Contents

Get ready for an unforgettable three-week journey into academic excellence!

Join our Summer School — a unique transformative academic and personal journey



Learn from award-winning Cambridge professors

Our Programme is designed and delivered by established Cambridge academics with multiple awards for teaching excellence and innovation.

Immerse yourself in the Cambridge experience

Live and study in an authentic Cambridge setting, experiencing college life, formal dinners, and the legendary supervision-style teaching.

Embrace personalised, small-group learning

Engage in interactive discussions, receive individual mentorship, and benefit from direct guidance in small classes designed for maximum impact.

Tailor your academic journey

Choose two from a selection of specialized modules in Microeconomics, Macroeconomics, Data Science, and Finance, exploring cutting-edge topics with real-world applications.

Gain exclusive career and postgraduate insights

Get career planning advice from academics and industry leaders from economics, data science, and finance sectors. Receive expert guidance on postgraduate applications from Cambridge admissions committee members.

Earn Certificate of Achievement and recommendation letter

Complete a written assessment to receive an official Certificate of Achievement from the Cambridge University - Nanjing Centre. Students with excellent performance may request a recommendation letter for their postgraduate applications.

Programme Overview

Where centuries-long tradition of academic excellence meets the forefront of innovation in teaching and learning — an exclusive programme designed and delivered by award-winning Cambridge lecturers

4 August - 23 August 2025

Selwyn College
University of Cambridge

Choose two modules
54 hours of contact time

Students aged 18+
Minimum GPA of 3.2 / B+

Apply online at
cunjc.org.cn/en/sign.html

Phase 1 deadline — 9 May
Phase 2 deadline — 6 June

Programme Components — experience Cambridge student life

- One week of online preparation courses (12 hours)
- Two weeks of in-person learning in Cambridge (42 hours)
- Career planning talks and leadership coaching with invited industry leaders
- Graduate applications sessions with admissions committee members
- Social events and networking opportunities with Cambridge professors
- Experience of living and studying in a Cambridge college
- Cultural exploration and social activities

Programme Portfolio — choose one (A) and one (B) module

Microeconomics
(A) Game Theory
(B) Economics of Networks

Macroeconomics
(A) Macroeconomic Theory
(B) Monetary Policy

Data Science
(A) Causal Inference
(B) Machine Learning

Finance
(A) Financial Econometrics
(B) Behavioural Finance

Teaching format
lectures — 13.5h
classes — 7.5h
for each module

Welcome to Our Summer School

Welcome to the Cambridge University - Nanjing Centre Summer School in Economics and Data Science.

I am delighted to invite you to our exciting Programme, designed to spark your curiosity, broaden your intellectual horizons, and equip you with essential skills for today's fast-paced world. Over three immersive weeks, you will gain insights from world-class lecturers and experience the academic traditions of Cambridge.

What makes our Programme special is the dedicated team of award-winning Cambridge professors, passionate about teaching and helping students reach their full potential. Our approach to teaching is entirely student-focused and evidence-based. We integrate advanced innovative learning methods to foster deep understanding and long-term retention. Every concept we teach is rooted in real-world examples, shaped by the latest developments in academia and industry.

At our Summer School, we believe true learning happens when knowledge meets inspiration. We combine academic rigor with collaboration and curiosity, allowing you to explore cutting-edge topics in Economics, Data Science, and Finance. You'll engage in thought-provoking discussions and discover real-world applications of your studies, building critical thinking skills and global connections along the way.

Beyond the classroom, you'll immerse yourself in the rich academic culture of one of the world's most prestigious universities. We look forward to meeting you and watching the ideas and achievements you bring to this journey.

See you in Cambridge!

Oleg Kitov
Academic Director of the Summer School

Programme Instructors

MyunGun Kim

MyunGun is an Assistant Professor of Economics and a Director of Studies in Economics at the University of Cambridge, where he also received his Ph.D. in Economics. His current research focuses on the measurement of productivity and the impact of changes in firm structures and business model innovations on productivity. MyunGun has over ten years of experience teaching courses in Macroeconomics, Statistics and Econometrics at Cambridge. For his outstanding contributions to teaching, MyunGun has been awarded the Faculty of Economics Best Teaching Prize three times.

Oleg Kitov

Oleg is an Associate Professor of Economics and the Director of Undergraduate Admissions at the University of Cambridge. Oleg holds several postgraduate degrees in Mathematics, Economics and Finance from the University of Cambridge and the University of Oxford. His research interests are in applied econometrics and machine learning. Oleg has fifteen years of experience teaching at Cambridge and Oxford for over 20 courses in Mathematics, Statistics, Econometrics, Data Science and Macroeconomics. Oleg has won multiple university-wide and national awards for teaching excellence and learning innovations.

Ruohan Qin

Ruohan is a College Teaching Associate at Selwyn College, and a Bye-Fellow at Downing College of the University of Cambridge. His main research interests are in microeconomic theory, particularly networks and game theory. At Cambridge, Ruohan has taught several undergraduate and postgraduate courses in Microeconomics, Labour Economics and Industrial Organization. Ruohan is an outstanding lecturer and teacher and has been awarded the Faculty of Economics Best Teaching Prize several times.

Weilong Zhang

Weilong is an Associate Professor of Economics and a Postgraduate Admissions Officer in Economics. Weilong holds a Ph.D. in Economics from the University of Pennsylvania. His research in the fields of labour economics, education economics, household finance, and psychological economics has been widely published in leading Economics journals, including the Journal of Political Economy and Journal of Labor Economics. Weilong has seven years of experience teaching courses in Microeconomics, Labour Economics, Public Economics and Finance, and has consistently received the highest evaluations from students.

A Tradition of Academic Excellence at Cambridge

Founded in 1209, the University of Cambridge is one of the world's most prestigious institutions, shaping the course of human knowledge for over 800 years. Home to over 120 Nobel laureates, 15 British prime ministers, and countless pioneers across disciplines, Cambridge is a place where tradition fuels innovation.

- Consistently ranked among the top 5 universities worldwide
- Ranked top university for Economics in the UK (Complete University Guide)
- A legacy of groundbreaking contributions to Economics and Data Science

Cambridge is more than a university – it's a transformative experience. From its historic lecture halls to its intimate supervision system, it offers an intellectual environment like no other. This summer, you will immerse yourself in its world-class academic culture, challenge conventional thinking, and develop the skills that will shape your future.

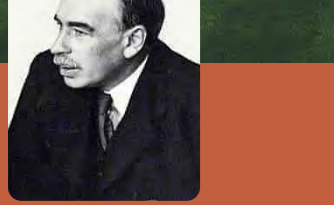
$$\phi(x) = \frac{1}{\sigma\sqrt{2\pi}} e^{-\frac{1}{2}\left(\frac{x-\mu}{\sigma}\right)^2}$$

A Legacy of Economic Thought & Innovation

The University of Cambridge has been at the forefront of economic theory and policy-making, shaping how we understand global markets, financial systems, and economic development. Many of the world's most influential economists—whose ideas continue to shape modern economic thought—studied and taught here.

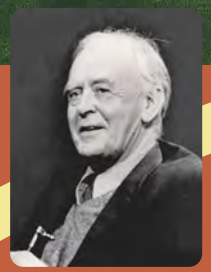
As a participant in the Cambridge University – Nanjing Centre Summer School, you will follow in the footsteps of these great minds, exploring cutting-edge ideas in Economics and Data Science while experiencing the same academic traditions that have shaped generations of scholars.

$$\frac{\partial x_i^m(\mathbf{p}, m)}{\partial p_j} = \frac{\partial x_i^h(\mathbf{p},}{\partial p_j} \frac{}{} \frac{\partial x_i^m(\mathbf{p}, m)}{\partial m} x$$



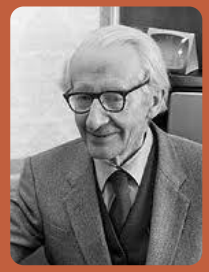
John Maynard Keynes

The father of Keynesian economics and modern macroeconomic theory



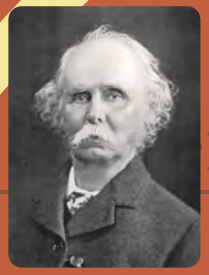
John Hicks

Novel laureate for his contributions to general equilibrium theory and welfare theory



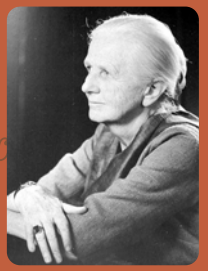
James Meade

Nobel Prize-winning contributors to national income accounting and macroeconomic modelling



Alfred Marshall

Founder of neoclassical economics, pioneer of microeconomics and market analysis



Joan Robinson

Pioneering economist in imperfect competition and post-Keynesian economics

Summer School Structure

Preparation Course

online 4 August – 8 August

Your learning journey will begin with an interactive week of online preparation that will ensure you arrive in Cambridge fully prepared, confident, and ready to dive into advanced academic discussions.

Strengthen your foundation
Engage in prep courses in mathematics and statistics that will equip you with essential knowledge to excel in your chosen modules.

Explore and refine your choices
Attend taster lectures introducing diverse offerings of our main Academic Programme, helping you make informed decisions about your academic track.

Connect with instructors and peers
Start building relationships with your professors and classmates before your in-person experience even begins.

Academic Programme

in-person 9 August – 23 August

For two weeks, you will experience the best of Cambridge's renowned teaching, blending traditional supervisions with innovative evidence-based learning. Our approach is interactive, intellectually stimulating, and highly personalized.

Programme Portfolio
You will be learning two modules of your choice in parallel, one Module (A) and one Module (B), to align with your academic interests and career aspirations, here are the modules we are offering this year:

Microeconomics
(A) Game Theory
(B) Economics of Networks

Data Science
(A) Causal Inference
(B) Machine Learning

Macroeconomics
(A) Macroeconomic Theory
(B) Monetary Policy

Finance
(A) Financial Econometrics
(B) Behavioural Finance

$$-\mathbb{E}_\theta\left[\frac{\partial^2}{\partial\theta^2}\log f_\theta(X)\right]$$

$$\frac{d}{d\alpha}\mathcal{L}(x^*,\lambda^*;\alpha)=\frac{\partial}{\partial}\mathcal{L}(x^*,\lambda^*;\alpha)$$

Teaching format
Each module will consist of 13.5 hours of lectures and 7.5 hours of classes

- Each module is roughly equivalent to a full-semester Cambridge course
- Lectures: 1.5 hours once per day (group size capped at 20 students)
- Classes: 1.5 hours once every two days (group size capped at 10 students).
- Assessment: 1.5-hour written exam on the last day of the Programme

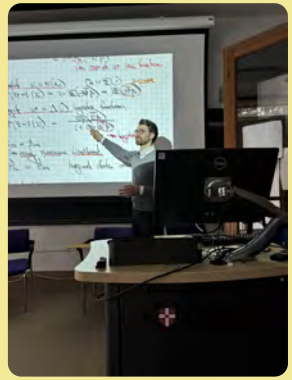
By the end of the three weeks, you'll have gained not only advanced academic knowledge but also practical skills, new perspectives, and a taste of life at one of the world's most prestigious universities.

$$u(x_1,x_2)=(\alpha x_1^\theta+$$

Graduate School & Career Planning

One of the most valuable aspects of our Summer School is a series of careers, leadership and graduate application talks that will provide practical guidance, insights, and inspiration for your future academic and professional journey. Explore career paths, gain expert advice, ask questions to support your ambitions.

Career talks and leadership coaching
Navigate your career path by gaining first-hand insights from invited speakers, successful industry leaders in finance, data science, and economics as they share their experiences, career journeys, and perspectives on today's biggest challenges in a series of talks and panel discussions.



Confirmed speakers
- Romans Popovs
  Head of M&A Special Projects and Structuring at BP
- Ayoub Semaan
  Partner at Cultivating Leadership, a professional training firm
- Maksim Sipos
  Co-founder and CTO at causaLens, a leading AI company

Postgraduate applications workshop
Planning to pursue a master's or PhD? Get exclusive insights from Cambridge academics and admissions committee members. We will guide you through the application process, help you understand key selection criteria, and share strategies for academic success. Our workshop will equip you with the knowledge and skills to secure a place at top universities in the UK, US, and beyond.

Your Summer School Journey

1

Join an official Cambridge University Nanjing Centre Programme

Unlike other summer schools at Cambridge or Oxford colleges, this official programme is run by a University Centre and led by Cambridge academics. It offers more than learning—it's an immersive learning experience guided by experts dedicated to your success.

2

Learn from award-winning Cambridge professors

Learn from award-winning lecturers with a proven track record of excellence in teaching and innovation. Our student-focused, evidence-based approach fosters deep understanding and lasting knowledge retention. At our Summer School, learning means engaging, questioning, and mastering concepts that stay with you for life.

3

Tailor your curriculum to your interests

Choose two from eight specialized modules in Microeconomics, Macroeconomics, Data Science, and Finance. Tailor your academic journey to match your passions, career goals, or curiosity, and explore cutting-edge topics shaping today's world.

4

Apply knowledge to real-world challenges

Our Programme is interactive and hands-on. Engage with real-world data, economic challenges, and industry insights. Through practical exercises, workshops, and case studies, you'll develop analytical skills, apply theoretical models, and tackle complex economic and financial issues with confidence.

5

Engage in personalised, small group learning

Experience Cambridge's renowned supervision system with small, interactive classes. Lectures are capped at 20 students, and classes at 10, ensuring direct engagement, lively discussions, and a supportive environment that fosters deep understanding, critical thinking, and maximized academic potential.

6

Live and learn in an authentic Cambridge setting

Immerse yourself in the Cambridge experience: live and learn at Selwyn College. Dine in the grand College Hall, walk in the footsteps of legendary scholars, and engage with academics, students, and guest speakers. This is more than a summer school—it's a glimpse into the life of a Cambridge student.

7

Gain exclusive career insights from industry leaders

Gain exclusive insights into career paths and industry trends through engaging guest lectures and panel discussions. Learn from industry leaders, successful entrepreneurs, and leadership coaches in finance and data science, as they share their expertise and personal journeys on career choices and professional growth.

8

Prepare for postgraduate success

Considering further studies? Gain first-hand insights from admission committees members. Learn about postgraduate opportunities, master the application process, and receive expert guidance on securing a place at top institutions in the UK, US, and beyond.

9

Explore Cambridge and beyond

Cambridge is a city of inspiration and history. Enjoy guided tours of historic colleges, libraries, and landmarks, gaining insight into its academic and cultural significance. Plus, explore London on an exciting weekend trip, adding another dimension to your learning journey.

10

Feel supported every step of the way

We are here to ensure you have an enriching experience, offering support with coursework, university life, social activities, and visa assistance. Every step of the way, we will help you make the most of your journey in Cambridge.

Experience Cambridge Student Life

Our Summer School will be held at Selwyn College, one of the constituent colleges of the University of Cambridge, where tradition meets modern living. Students will be offered private en-suite rooms, providing the perfect space to relax and focus during your time here. You will enjoy access to the same College facilities and welcoming community as full-time Cambridge students.

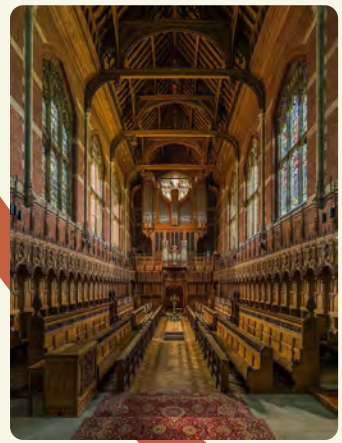
Hosted at Selwyn College

Ideal location

Adjacent to the Faculty of Economics and just a short walk from the historic Cambridge city centre.

En-suite accommodation

Enjoy the privacy of a fully equipped en-suite room, designed with students in mind.



College facilities

Access to library, dining hall, chapel, gardens, sports grounds, common rooms, help from Porters and Programme Assistants.

Historic dining hall

Enjoy complimentary daily breakfast and lunch and two candle-lit formal dinners.

Global community

Connect with fellow students from around the world, creating friendships and networks that will last a lifetime.

English garden

Surrounded by lush gardens and stunning architecture, the College offers a unique environment.

Social Life

Welcome event

Kick off your Summer School journey with an exciting welcome event, where you'll meet your fellow students and academic staff in a relaxed and friendly setting.

Walking tour of Cambridge

Discover the beauty and history of this iconic university city with a guided walking tour. Explore its cobbled streets, world-famous colleges, and hidden gems that bring Cambridge's rich heritage to life.

Punting tour

Punting in Cambridge offers the best way to take in the sights, as the River Cam flows through the heart of the University, providing one-of-a-kind views of the renowned Colleges.

Trip to London

Immerse yourself in the energy and culture of the UK's capital city with a day trip to London. Visit iconic landmarks, enjoy free time for sightseeing, and experience the vibrancy of one of the world's most exciting cities.

Garden party

End your Summer School experience in style with a delightful garden party. Celebrate your achievements, say farewell to new friends, and soak in the beauty of Selwyn's serene gardens before you depart.

Cambridge

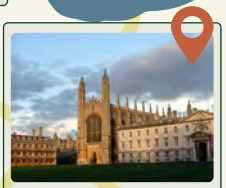

#localproduce


#newtonappletree


#jesusgreen


#afternoonpunting

Bridge of Sighs


#famouschapel

King's College Chapel


#nonailbridge

Mathematical Bridge


#feelinginspired

Fitzwilliam Museum


#selwyncollegeisthebest

University Botanical Garden


#englishrose


#lostinacity

↓ London

$$-\lambda\left(g\left(\mathbf{x}\right)-b\right)$$

Which modules are right for you?

Our modules are designed to be accessible to students from all academic backgrounds with some university experience in quantitative methods

One module components
Teaching: 13.5 hours of lectures, 7.5 hours of classes
Equivalence: full-semester undergraduate course
Assessment: one written exam
Credit: 2 credits (US system) / 3.5 ECTS (European system).

Prerequisites

Even though no prior knowledge of the subject matter is required, **a basic understanding of quantitative methods, including calculus and probability, is essential.** Some foundational concepts will be covered in the Online Preparation Course to ensure you are ready to engage with the material.

Build confidence before you arrive

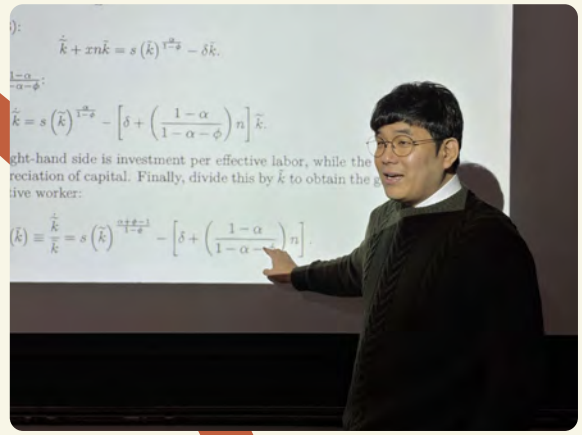
During the first week of online preparation, you'll explore key mathematical and statistical concepts, attend taster lectures, and familiarize yourself with the content of each module. This ensures that when you step into the classroom in Cambridge, you are fully prepared and ready to engage.

Tailor your learning experience

We understand that academic interests can evolve. That's why we offer an extra level of flexibility—you can attend lectures for additional modules during the online week and, if you find your original choice isn't the right fit, switch to the new module (subject to availability).

Main Academic Programme

Choose two modules: one from Module A list and one from Module B list. This ensures that you can explore topics that align with your academic and career interests. Our modules are independent and are designed to be compatible with each other in any selected combination.



Programme Portfolio

$$H=\sum_{j=1}^{|Y|}\left[C_D(y*)-\right.$$

Module A List (choose one)

Microeconomics A: Game Theory
Instructor — Ruohan Qin

An introduction to the principles and applications of game theory, exploring equilibrium concepts, strategic dominance, and dynamic games. Learn to analyse real-world strategic interactions in business, economics, and beyond.

Macroeconomics A: Macro Theory
Instructor — Myungun Kim

A comprehensive overview of macroeconomics, from short-run dynamics to long-run growth. Explore economic growth, monetary/fiscal policy, and real-world case studies like the UK's post-pandemic recovery.

Data Science A: Causal Inference
Instructor — Weilong Zhang

Master causal analysis techniques, such as randomised controlled trials, instrumental variables, difference-in-difference, and regression discontinuity. Apply AI tools like ChatGPT to policy evaluation and economic research.

Finance A: Financial Econometrics
Instructor — Oleg Kitov

Explore econometric techniques for analysing financial time series, including ARMA models, non-stationarity, cointegration, momentum, volatility, and event studies. Use Python to model stock prices, cryptocurrency, and trading strategies.

$$\hat{\beta}=\left(X'X\right)^{-1}X'Y$$

Module B List (choose one)

Microeconomics B: Economics of Networks
Instructor — Ruohan Qin

Examine how networks—friendships, online platforms, and supply chains—impact economic and social outcomes. Topics include network formation, production, epidemics, and market dynamics.

Macroeconomics B: Monetary Policy
Instructor — Myungun Kim

Learn the foundational theories behind monetary policy while exploring modern macroeconomic approaches. Discover how advanced techniques, such as natural language processing (NLP), can be applied to analyse central bank communications and assess policy effectiveness.

Data Science B: Machine Learning
Instructor — Oleg Kitov

Learn modern machine learning techniques including Lasso, Ridge, and PCA. Apply Python to analyse economic and financial datasets, gaining practical skills in predictive modelling and data analysis.

Finance B: Behavioural Finance
Instructor — Weilong Zhang

Understand how psychological biases influence financial markets. Use AI tools to analyse sentiment data and uncover market anomalies through case studies like the GameStop short squeeze.

Applying to Summer School

We welcome applicants from a wide range of academic and professional backgrounds with an interest in Economics, Business, Finance, Econometrics, Data Science, Machine Learning, Applied Mathematics, Statistics, Engineering, Computer Science, and related fields.

Apply online at cunjc.org.cn/en/sign.html

Application timeline

Deadline Phase 1: 9 May 2025
(early-bird application fee waved)
Deadline Phase 2: 6 June 2025*
(application fee of £69)
* Students without UK visa requirements may apply later

Application materials

- Online application form (go to **cunjc.org.cn/en/sign.html**)
- University / College transcript (if available)
- English proficiency certificate (if applicable)

Entry requirements

Age
At least 18 years old by the start of the Programme

Grades
Minimum recommended GPA 3.2/B+, or equivalent

Prerequisites
Some basic knowledge of calculus and probability (partly covered during the online Preparation Course)

English proficiency
Unless you have studied in English or have lived in an English-speaking country, you need to submit a proficiency certificate.

Accepted proficiency certificates / required score

IELTS: 6.5	CET-4: 550
TOEFL iBT: 90	CET-6: 500

Full Terms & Conditions available online at **cunjc.org.cn/en/**