
Weekend Courses 2024-25

The origins of key scientific discoveries, from the Sumerians to Darwin

Start date: 28 March 2025 **End date:** 30 March 2025

Venue: Madingley Hall
Madingley
Cambridge
CB23 8AQ

Tutor: Dr Vasos Pavlika **Course Code:** 2425NRX033

Tutor biography

Dr Vasos Pavlika has a BSc in Physics and Mathematics, a MSc in Applied Mathematics, and a two-volume PhD thesis in Mathematical Physics (Magnetostatics and Fluid Dynamics).

Vasos has 35+ years of experience in lecturing, he has been a Field Chair, Senior lecturer and is currently Associate Professor (Teaching) at University College London. Vasos has been involved with many HE institutions including: the University of East London, the University of Gloucestershire, the University of Westminster, SOAS University of London (both on-campus and online), St George's University of London, Goldsmiths College University of London (online and on-campus), the London School of Economics and Political Science, the Department for Continuing Education University of Oxford and the Open University. He has been a tutor with ICE, University of Cambridge since 2015.

Vasos has been an External Examiner/reviewer both nationally and internationally conducting his duties in: Malaysia (Penang and Kuala Lumpur), Singapore, India (Hyderabad, Bangalore and Chennai), China (Changshu), Bulgaria (Varna), Egypt (Cairo and Alexandria), Greece (Athens and Thessaloniki), Dubai, Germany (Leipzig), Sri Lanka (Colombo), Oman (Muscat), Philippines (Manila) and Pakistan (Karachi) within the UK Vasos has examined at the following universities: Anglia Ruskin, Birmingham City, Bolton, Bradford, Bedfordshire, Bucks New, Buckingham, Cardiff Metropolitan, Chichester, Coventry, De Montfort, East London, Greenwich, Kingston, Lincoln, Liverpool John Moores, Northumbria, Open, Plymouth, Salford, Sheffield, Staffordshire, South Wales, Ulster, West of England, West of London and Wolverhampton in disciplines including: Physics, Computer Science, Mathematics, IT, Software Engineering, Economics and Finance.

Vasos' research interests include Applied Mathematics, Mathematical Physics, Mathematical Modelling, the History of Physics and the History of Mathematics.

Summary of content

Science is at the heart of human existence, from the colours of our clothes to the communication devices that we use, this course discusses some of the ideas that led to the development of science and its creation. If you are curious about the origins of scientific thought then this course is for you. We will commence with looking at the Science of the Sumerians, passing through the Greeks, India and the Islamic scholars. There will be an investigation of the Enlightenment followed by looking at the great work of I Newton. Histories of Quantum Mechanics, Relativity, Chemistry and Computer Science will follow and conclude the weekend.

Aims

This course aims to

- deliver knowledge of the origins of science
- introduce the iterative development of science
- discuss key scientists in the development of the modern world

Course sessions

Friday

Please plan to arrive between 16:30 and 18:30. You can meet other course members in the Terrace Bar which opens at 18:15. Tea and coffee making facilities are available in the study bedrooms.

19:00	Dinner
20:30 – 22:00	Science in Babylon, Egypt and Greece
22:00	Terrace Bar open for informal discussion

Saturday

07:30	Breakfast (for residents only)
09:00 – 10:30	The Science of Greece, Islam and India
10:30	Coffee
11:00 – 12:30	The Scientific Method, the Scientific Revolution and the Scientific Enlightenment
13:00	Lunch
14:00 – 16:00	Free time
16:00	Tea
16:30 – 18:00	Copernicus, Galileo, Kepler, Descartes and their contemporaries
18:00 – 18:30	Free time
18:30	Dinner
20:00 – 21:30	Copernicus, Galileo, Kepler, Descartes and their contemporaries
21:30	Terrace Bar open for informal discussion

Sunday

07:30	Breakfast (for residents only)
09:00 – 10:30	The History of 20th-century Science: Quantum Physics and Relativity
10:30	Coffee
11:00 – 12:30	Two brief Histories: Chemistry and Computer Science
12:45	Lunch

The course will disperse after lunch

Presentation of the course

You will be taught using PowerPoint presentation (to be distributed) and discussions led by the tutor, occasionally video clips may accompany the presentations.

Learning outcomes

As a result of the course, you will gain a greater understanding of the subject and you should be able to:

- comprehend how and why Scientific studies began
- comprehend where Science originated
- become familiar with many of the great Scientific Giants in history
- understand key developments in 20th-century Science and beyond

Reading and resources list

There are no compulsory readings for the course.

However, you may find the below recommended reading list of interest to supplement your course.

Gutfreund, H and Renn J, *The Road to Relativity* (Princeton University Press 2015)

Jackson, T, *The History of Science* (Worth Press 2019)

Jaffe, B M, *Crucibles: Story of Chemistry from Ancient Alchemy to Nuclear Fission* (Dover Publications)

Kay, A F, *Escaper from Shadow Physics* (Weidenfeld & Nicolson 2024)

Leavitt, D, *The man who knew too much: Alan Turing and the invention of the computer* (Phoenix Publisher)

Note: Institute of Continuing Education (ICE) students are entitled to 20% discount on books published by Cambridge University Press (CUP) which are purchased at the Press bookshop, 1 Trinity Street, Cambridge (Mon-Sat 9am – 5:30pm, Sun 11am – 5pm). A letter or email confirming acceptance on to a current ICE course should be taken as evidence of enrolment.

(Information correct as of April 2024)