



Advanced Mathematics
Support Programme®



Problem Solving Matters - Developing the Problem Solving Skills Required for University Admissions Tests

22nd June 2019

Overview

This course is for year 12 students from state-funded schools, academies and colleges who are interested in applying for places at Oxford University, Imperial College, Durham University and Warwick University to study Mathematics or for students who wish to improve their mathematical problem solving skills in preparation for a university course. Please note that the course is **not** suitable for GCSE students.

Students applying for places to study Mathematics or Computer Science courses (including joint honours) at Oxford University and any Mathematics undergraduate course at Imperial College, London will be required to sit the Mathematics Admission Test (MAT) as one part of the admissions process. Students applying for Mathematics at Durham University or Warwick University may be required to sit the MAT or TMUA (Test of Mathematics for University Admission) examination.

This course is designed to prepare students for the way they will have to think to achieve success in the MAT, TMUA and other problem-solving mathematics examinations by developing their mathematical thinking and problem solving skills.

The course **usually** consists of three face to face study days, three summer assignments and four online follow-up sessions.

Due to Coronavirus, we will again be delivering the whole course online. Students will be able to access videos, questions, hints and online support. There will also be live lectures and mentor sessions. The live lectures can be watched later, but the mentor sessions can only be accessed live.

Aims

- To introduce mathematical problems of the difficulty level of the university admissions tests.
- To develop students' problem solving skills so they have confidence in applying for universities that require admissions tests or take them into consideration.
- To provide information about the requirements of applicants for a maths or maths-rich undergraduate degree.
- To provide support for students preparing for the MAT or TMUA admissions tests.

Who will benefit from attending?

Any student who wishes to apply for a university that requires or accepts the MAT or TMUA admissions tests will benefit from attending. The course also provides a good base for preparing for the STEP examinations.

Content

Each week will focus on specific problem solving skills that students will need to develop, featuring workshops where students will be supported by mentors from the hosting university.

Week 1 focuses on curve sketching

Week 2 focuses on coordinate geometry.

Week 3 focuses on calculus

Week 4 focuses on surds, indices and logarithms.

Between weeks 4 and 5, students will attempt three summer worksheet activities, one on curve sketching, one on geometry and one on logarithms and indices. These worksheets will be marked by the mentors.

Week 5 focuses on combinatorics

Week 6 focuses on sequences and functions

Following week 6, additional materials on trigonometry will be available.

Other Information

This course takes place (virtually) at 6 venues:

University of Oxford

Imperial College, London

Durham University

University of Warwick

University of Bristol

University of Manchester

The course is identical at all venues and applicants are asked to select the most appropriate venue for them. Applicants may be offered a place at an alternative venue if their first choice of venue reaches capacity.

The live mentor sessions for **Oxford** will take place on Saturdays 26th June, 3rd, 10th and **17th July**, 25th September and 2nd October.

For all the other venues, the live mentor sessions will take place on Saturdays **19th** and 26th June, 3rd and 10th July, 25th September and 2nd October. The application form allows you to indicate if you are only available mornings or afternoons because of regular activities such as sport or music.

We expect to be able to offer places to all applicants, but **applications received by 23rd May are more likely to be allocated to the first choice university.**

Eligibility

This course is only for students from state-funded schools, colleges and academies.

Cost

If you will have trouble meeting the cost of the course, free places are available. This can be indicated on the application form.

Study Schedule

The three face to face study days for Problem Solving Matters at **Imperial College, London** will take place on the following dates:

Saturday 22nd June, Saturday 13th July and Saturday 21st September

Key Facts

Event ref:	#5850
Audience:	Students
Target year:	Year 12
Curriculum focus:	University admissions tests, A level Mathematics
Mathematical focus:	Pure, Problem solving
Event format:	Student course
Event length:	6 weeks
Online sessions:	12
Region:	London and South East
Venue:	Imperial College, London
Start date:	Sat 22nd Jun 2019
Fee:	£60

Registration

For more information, or to register for this event, please visit <https://amsp.org.uk/events/details/5850>