



Advanced Mathematics  
Support Programme®



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

University of Warwick

2nd July 2022

## 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, University of Bristol, University of Manchester 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 Warwick University will generally be required to sit an admissions test (MAT, TMUA or STEP), and several other universities give precedence and/or lower offers to students who are successful in such tests.

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

**We will monitor the coronavirus situation and move some or all of the face to face study days online if appropriate.**

## 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

The study days 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.

Study day 1 focuses on curve sketching and coordinate geometry.

Study day 2 focuses on calculus, surds, indices and logarithms.

Between study day 2 and 3 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 mentors provided by the university hosts.

Study day 3 focuses on trigonometry and either combinatorics or sequences and functions.

Students will also attempt a mathematical modelling activity on day 3.

## Other Information

This course takes place at 6 venues. 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 3 face to face study days take place on Saturdays, with the approximate timings of arrival from 9:30am, to end at the latest 4pm.**

The dates for each venue are as follows:

**University of Oxford:** 25th June, 9th July and 10th September

**Imperial College, London:** 25th June, 9th July and 24th September

**Durham University:** 25th June, 9th July and 24th September

**University of Warwick:** 2nd July, 16th July and 17th September

**University of Bristol:** 25th June, 2nd July and 17th September

**University of Manchester:** 25th June, 9th July and 17th September

**Applications received by 16th May are more likely to be successful, and more likely to be allocated to the first choice university.**

Lunch will not be provided on the face to face study days. It would be best to bring a packed lunch as it may be difficult to purchase on the day.

## 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.

Students will be expected to make their own travel arrangements to get to the venue.

We regret that we will be unable to provide transport costs. Please take this into account when selecting your first choice of venue for the course.

## Key Facts

<b>Event ref:</b>	#9663
<b>Audience:</b>	Students
<b>Target year:</b>	Year 12
<b>Curriculum focus:</b>	University admissions tests, A level Mathematics
<b>Mathematical focus:</b>	Pure, Problem solving
<b>Event format:</b>	Student course
<b>Event length:</b>	3 days
<b>Study days:</b>	3
<b>Online sessions:</b>	4
<b>Region:</b>	National
<b>Venue:</b>	University of Warwick
<b>Start date:</b>	Sat 2nd Jul 2022
<b>Fee:</b>	£60

## Registration

For more information, or to register for this event, please visit <https://amsp.org.uk/events/details/9663>