



Teaching Discrete Mathematics 2 (TD2)

Online and London

11th February 2020

Overview

Discrete maths features in all AS/A level Further Mathematics specifications, albeit under different titles:

- Discrete Mathematics - AQA and OCR A
- Decision Mathematics - Edexcel
- Modelling with Algorithms - OCR B (MEI)

Teaching Discrete Mathematics 2 (TD2) is a [sustained professional development course](#) for teachers wishing to build their confidence in teaching discrete/decision mathematics. TD2 builds upon the topics studied in [TD1](#) to cover the additional subject content required for A level Further Mathematics.

TD2 features:

- eight live online tutorials
- two study days
- access to online teaching and learning resources
- email support from tutors and access to an online group forum

Towards the end of the course a short assignment is issued, for which support and guidance are provided. Course certificates will be available for those participants completing the assignment.

Aims

- Gain a deep understanding of the application of algorithms to a wide range of problems
- Develop skills with using standard algorithms to solve optimisation problems
- Learn project planning processes which minimise overall costs and make the best use of available resources
- Develop confidence with incorporating practical work within maths teaching
- Link topics in discrete maths with other areas of maths

Who will benefit from attending?

TD2 is designed for A level Mathematics teachers who are new to teaching discrete/decision mathematics, or those that have previously taught D1 and D2 but wish to broaden and deepen their understanding.

Our sustained courses enable teachers to broaden and deepen their subject, pedagogical and pedagogical content knowledge. Teachers, with enhanced subject knowledge, are therefore better equipped to make links between topics, address students' misconceptions and confidently challenge learners at all attainment levels. Our course aims and intended outcomes are consistent with the principles set out in the Education Inspection Framework.

Content

TD2 covers the discrete/decision mathematics content for A level Further Mathematics. This includes the following topics:

- Graph Theory: Planarity
- Floyd's Algorithm
- Dynamic Programming
- Linear Programming: Simplex
- Two-stage Simplex & Big-M method
- Group Theory
- Transportation
- Second Order Recurrence Relations
- Decision Analysis

These topics appear within the Further Mathematics specifications of the reformed Maths A levels for first teaching from September 2017.

Materials and Equipment

A computer with a reliable internet connection will be required to attend the online tutorials. In addition, a headset with a microphone is suggested to get the best experience of the online tutorials.

Frequently Asked Questions

Do I need to have taught A level Mathematics before doing the TD2 course?

There is no requirement that applicants have taught A level Mathematics before undertaking TD2.

Do I need to have studied TD1 before applying for the TD2 course

Although we do not insist that teachers applying for TD2 have studied TD1 with us, it is important to point out that the subject content studied in TD1 is an essential foundation for many topics in TD2. Please be aware that the TD1 course includes topics that were not previously included in any of the D1 legacy specifications. If you require further information or advice, you should contact the course leader.

How much time will I need to devote to studying?

It is difficult to be specific as this will depend on previous experience. In the past, delegates have reported spending between 1 and 4 hours studying each week. Ideally, delegates should aim to study regularly for a few hours each week however, in reality many working teachers have weeks when this is difficult and they use out-of-term time to catch up.

Do I have to hand in any work during the course?

The TD2 assignment is the only work that delegates hand in. To receive a certificate at the end of your TD2 course you will need to submit and pass the TD2 assignment. Certification is optional but we strongly encourage you to submit an assignment anyway to help you consolidate what you have learnt. In the past most teachers have chosen to submit an assignment.

Teachers working at state-funded schools/colleges need to demonstrate that they have engaged with the course unit to trigger a course fee reimbursement at the end of the course. If you have missed either study day you may be required to submit the TD2 assignment in order to qualify for the course fee reimbursement whether or not you wish to certify.

When do the TD2 course fees have to be paid?

An invoice for course unit fees is issued after enrolment at the start of the course unit. Invoices are issued no later than one month after a delegate has started their course.

How does the subsidy for teachers in state-funded schools/colleges work?

The AMSP is supported by the Department for Education and therefore only course fees for teachers working in state-funded schools/colleges in England are eligible for a subsidy. If the course fee is paid by the applicants school/college then the same school/college will receive the subsidy when the course is completed by the applicant.

Can I pay my own course fee?

Yes, you may choose to pay your own course fee. Applicants who are teachers working in state-funded schools/colleges in England are still eligible for a course fee subsidy. If the course fee is paid directly by the applicant then the applicant will receive the fee reimbursement on completion of the course. It is a requirement that the applicant submits an email address that has been issued by the state-funded school/college where they are employed and that the applicants email address is substantiated.

What happens if I can't attend one or more of the study days?

Teachers on the course enjoy the study days and appreciate the chance to meet up with other teachers on the course. Study day materials are shared with all course delegates afterwards. If you are a teacher working at a state-funded school/college then to be eligible for a course subsidy you will need to demonstrate that you have engaged with the course, which includes the expectation that you will attend the face-to-face study days.

If you are unable to attend a study day and this is due to unforeseen or special circumstances then the course fee reimbursement may still be granted at the discretion of the Course Leader. You may be required to submit the TD2 assignment as additional evidence of engagement with the course. If you pass the end of unit assignment, you will still be eligible for a TD2 course certificate.

Eligibility

Participants must have a sound understanding of the discrete content of AS level Further Mathematics, ideally through having completed [TD1](#) though this is not compulsory. This requires knowledge of subject content beyond the scope of the D1 modules in the legacy specifications.

Cost

The course fee for TD2 is £300.

If you are working in a state-funded school or college, participation in this course attracts a reimbursement of course fees, subject to engagement and completion of the course.

Schools and colleges located within [Priority Areas](#) are eligible to receive a further subsidy of £500 to support staff cover and travel costs.

Study Schedule

Study days

Study day 1:

Central London

Saturday 21 March 2020

Study day 2:

Central London

Saturday 16 May 2020

Venue details:

Venue	Address	Directions
London	NCVO, Society Building, 8 All Saints Street, London, N1 9RL	?

Online sessions:

Online sessions are conducted live and recordings are available for playback

Evening online tutorials (19:00-20:15)	Study content
Tuesday 11 February 2020	Course introduction
Thursday 27 February 2020	Graph Theory: Planarity
Thursday 12 March 2020	Dynamic Programming
Thursday 26 March 2020	Group Theory
Thursday 23 April 2020	Linear Programming: Simplex 1
Thursday 7 May 2020	Linear Programming: Simplex 2
Thursday 21 May 2020	Transportation
Thursday 11 June 2020	Second Order Recurrence Relations

Assignment:

During July and August you will work toward completing an assignment. The deadline for this assignment is 7 September 2020.

Unit certification: 30 September 2020 (or before)

TD participant feedback

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I found the course so useful, the online recordings, consolidation exercises, study days and assignments really ensure that you put the effort in.

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Very clear with varied explanation and useful tips.

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The tutors were very knowledgeable and were able to answer questions in depth.

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Loved all of it.

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Good stretch and challenge activities.

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I thoroughly enjoyed the course. The passion that all the lecturers have is amazing.

Key Facts

Event ref:	#6727
Audience:	Teachers
Curriculum focus:	A level Further Mathematics
Mathematical focus:	Discrete
Event format:	Sustained Professional Development
Event length:	6 months
Study days:	2
Online sessions:	8
Region:	National
Venue:	Online classroom and study days in London
Next session:	Thu 26th Mar 2020
Fee:	£300
State-sector subsidy:	£300
Priority Area subsidy:	£800

Registration

For more information, or to register for this event, please visit <https://amsp.org.uk/events/details/6727>