Supporting students of A-level Further Mathematics at Toot Hill Sixth Form College

The study of mathematics has been developed over centuries and has challenged the minds of some of history’s greatest thinkers. It is a highly inter-connected subject that empowers us to shape the future developments in Science, Technology, Engineering and Business. We are determined that our students enjoy the study of maths and gain a sense of fulfilment as their confidence grows through the acquisition of more knowledge, practising new skills and using both to successfully solve problems. Students will develop strong academic skills, such as those of analysis, evaluation and communication, that will benefit them in a range of Post 18 pathways. The Mathematics department will support all students to achieve their full potential and teachers value the support of parents and carers as students’ progress towards the external examinations. Below is some important information and frequently asked questions designed to inform parents and carers. Please contact teaching staff or the KS5 Lead teacher if you have further questions.

**Department staff:**

Head of Department – Mrs K Short– kshort@toothillschool.co.uk

Lead teacher for KS5 Maths – Mrs D Clarke – dclarke@toothillschool.co.uk

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| Subject  | Exam board | Course title and code | Structure  | Internal assessments | Year 13 Final exams |
| Mathematics | AQA | 7367 A Level Further Mathematics | **Pure**1. Proof
2. Complex numbers
3. Matrices
4. Further algebra and functions
5. Further calculus
6. Further vectors
7. Polar coordinates
8. Hyperbolic functions
9. Differential equations (Y13 only)
10. Numerical methods (Y13 only)

**Mechanics**1. Dimensional analysis (Y12 only)
2. Momentum and collisions (Y12 only)
3. Work, energy and power
4. Circular motion
5. Centres of mass and moments (Y13 only)

**Discrete**1. Graphs
2. Networks (Y12 only)
3. Network flows
4. Linear programming
5. Critical path analysis
6. Game theory for zero-sum games
7. Binary operations

  | *Year 12 November*Pure *Year 12 June*Paper 1: PurePaper 2: Mechanics and Discrete*Year 13 November*Paper 1: PurePaper 2: Pure*Year 13 March*Paper 1: PurePaper 2: PurePaper 3: Mechanics and Discrete  | 7367/1 Pure **2 hours 22nd May 2024 pm** 7367/2 Pure **2 hours** **3rd June 2024 pm** 7367/3 Mechanics and Discrete **2 hours** **7th June 2024 pm** |

**Frequently asked questions**

1. Where can I find past papers and mark schemes?
* You can find all past paper questions, mark schemes and examiners reports here: AQA | AS and A-level | Mathematics | Assessment resources <https://www.aqa.org.uk/subjects/mathematics/as-and-a-level>
1. Does my student know where to access guidance when answering exam questions?
* The AQA website also has examiner reports that students will find useful in understanding common misconceptions: [AQA | AS and A-level | Mathematics | Assessment resources](https://www.aqa.org.uk/subjects/mathematics/as-and-a-level/mathematics-7357/assessment-resources)
* In class, we complete regular assessments and exam questions. Students have guidance on how to answer these exam questions in their exercise books which they can use as part of their revision in the atrium.
1. What happens if my student has gaps in their knowledge due to absence?
* Ask the member of staff what has been missed and use the textbook to read the appropriate section, follow the worked examples and do the associated exercise.
* Use the tutorial video provided by Integral Maths (<https://integralmaths.org/>) for extra support – login details available from classroom teachers.
1. What resources are recommended to support my student?
* Textbooks and revision guides for mathematics which can be bought new or second hand online. Students have been signposted to the books they are recommended to buy.
* Revision lists and other resources on the general channel of Teams.
* Integral Maths features tutorial videos on each area of the course.
* Exam practice questions should be completed at home regularly to develop key exam skills.
1. What else can I do to support my student at home?
* Parents/carers could direct students to use their revision lists, or download exam practice questions from the AQA website. You could also time students when doing questions (we recommend a mark a minute!).
* Parents/carers could also test their knowledge of key concepts by using flash cards.
1. How can I help with revision?
* Encourage your student to access the revision homework tasks mentioned above. If you are able to take part in quizzing your student (if they have made flashcards or are using online quizzes), this will give them some variation to their revision and works well as a revision technique.
* Encouraging your student to focus on the areas of the courses that they feel less confident with will also be beneficial.
1. What can I do if I need more support or my student is needing more support?
* Please contact the classroom teacher or the KS5 Lead teacher to arrange a meeting and devise a structured revision plan.