

# SYLLABUS OUTLINE

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## Mathematics HL

The course consists of the study of seven core topics and one option topic.

**Total 240 hrs**

### Core syllabus content

**190 hrs**

#### Requirements

All topics in the core are compulsory. Students must study all the sub-topics in each of the topics in the syllabus as listed in this guide. Students are also required to be familiar with the topics listed as presumed knowledge (PK).

Topic 1—Algebra	20 hrs
Topic 2—Functions and equations	26 hrs
Topic 3—Circular functions and trigonometry	22 hrs
Topic 4—Matrices	12 hrs
Topic 5—Vectors	22 hrs
Topic 6—Statistics and probability	40 hrs
Topic 7—Calculus	48 hrs

### Option syllabus content

**40 hrs**

#### Requirements

Students must study all the sub-topics in one of the following options as listed in the syllabus details.

Topic 8—Statistics and probability	40 hrs
Topic 9—Sets, relations and groups	40 hrs
Topic 10—Series and differential equations	40 hrs
Topic 11—Discrete mathematics	40 hrs

### Portfolio

**10 hrs**

Two pieces of work, based on different areas of the syllabus, representing the following two types of tasks:

- mathematical investigation
- mathematical modelling.