

Syllabus 9709 GCE A Level Mathematics – Unit 05 (Mechanics 2)

Recommended Prior Knowledge:

This syllabus follows directly from M1. Students studying M2 must have already studied M1. The A Level course containing M2 consists of Units P1, P3, M1 and M2. Section 2 of P3 (particularly topic 8, differential equations) must be studied before topic 5 (motion under a variable force) in Section 1 of this Unit, can be completed. The Unit M2 is worth 20% of the total assessment for A Level mathematics.

General Resources

Cambridge University Press has published a series of textbooks created specifically for the CIE syllabus. The recommended book for this course is :-

- Mechanics 2 ISBN 0 521 53016 4

Internet sites

There are a number of appropriate sites covering this Unit.

- General – a useful general site for M2 is www.mathsrevision.net/alevel which contains general revision notes on most topics within this Unit.
- Specific – suitable sites can be found by searching under specific topics (e.g. projectiles, circular motion).

SECTIONS

1	<p>Section 1 studies the motion of a particle under three different situations,</p> <ul style="list-style-type: none"> ▪ Motion of a particle moving as a projectile freely under gravity (Topic 1). ▪ Motion of a particle moving in a horizontal circle with constant speed (Topic 3). ▪ Motion of a particle under the action of a variable force (Topic 5). <p>Approximately 60% of the assessment for the Unit.</p>
2	<p>Section 2 deals with the concept of the moment of a force and the position of the centre of mass of symmetrical, composite and other shapes. It looks in detail at the equilibrium of a rigid body under a set of forces, including the cases when the body is on the point of toppling or sliding. (Topic 2). It then looks at Hooke's Law and problems involving an elastic string (or spring), including the use of the conservation of energy (Topic 4). Approximately 40% of the assessment for the Unit.</p>

Please note that the Sections outlined above are not of equal size. They have been designed to provide coherent topics that will take students through this A Level Unit in a logical and ordered way. A very approximate weighting is given with each Section.