

Mathematics AS level

The AS level mathematics qualification is obtained by taking two papers: a Pure Mathematics paper (Paper 1) and a combined Statistics & Mechanics paper (Paper 2). This work is covered by two books.

Mathematics AS level Year 1 (Michaelmas term)

- (1) In the first year, Pure Mathematics (Year 1 AS) is taken which replaces the old syllabus C1 and C2. There are some differences. Topics lost include the Remainder Theorem, radians, arithmetic & geometric series, and the trapezium rule. Topics gained include mathematical proof, set notation, the exponential function and its $\ln(x)$ inverse, exponential growth and decay, vectors (magnitude & direction, and conversion between Cartesian & polar form).
- (2) The syllabus is timetabled to be completed over the Michaelmas term (14 weeks).
- (3) The book has a blue cover and is Greg Attwood *et al.*, *Edexcel AS and A level Pure Mathematics Year 1/AS*. Pearson, May 2017.
- (4) If the AS examination is taken at the end of Year 1, Paper 1 is 2 hours and constitutes 62.5% of the marks.

Statistics & Mechanics AS level Year 1 (Hilary term)

- (1) In the first year, the combined Statistics & Mechanics (Year 1 AS) is taken which replaces the old syllabus S1 and M1. For statistics, gone are stem & leaf diagrams, skewness, calculation of regression lines and correlation coefficients, normal distribution, and mean and variance of discrete distributions. Appearing are the binomial distribution, and hypothesis testing. For mechanics, topics lost are impulse and dynamics, and the coefficient of friction. Included is the use of calculus for motion in a straight line.
- (2) The syllabus is to be covered over the Hilary term (11 weeks).
- (3) The book has a brown cover and is Greg Attwood *et al.*, *Edexcel AS and A level Mathematics Statistics & Mechanics Year 1/AS*. Pearson, May 2017.
- (4) If the AS examination is taken at the end of Year 1, the Paper 2 is 1 hour 15 minutes and takes 37.5% of the marks.

Mathematics A level

If the student continues for the A level the AS examinations are omitted and instead three papers are taken at the end of the study period: two Pure Mathematics papers (Papers 1 and 2) and a combined Statistics & Mechanics paper (Paper 3). These cover the two years of work and include AS topics. There are two books for the additional work.

Mathematics A level Year 2 (Michaelmas term)

- (1) In the second year, Pure Mathematics (Year 2) is taken which replaces the old syllabus C3 and C4. Topics that no longer appear include volume of revolution, vector equation of a line, and the scalar product of two vectors. Appearing in this syllabus are arithmetic & geometric series, radians, trapezium rule, differentiation of inverse functions, small angle approximations of the trigonometric functions, and the Newton-Raphson method.
- (2) The syllabus is covered over the Michaelmas term (14 weeks).

- (3) The book has a blue cover and is Greg Attwood *et al.*, *Edexcel A level Pure Mathematics Year 2*. Pearson, May 2017.
- (4) Papers 1 and 2 are each two hours and cover 33% of the marks.

Statistics & Mechanics A level Year 2 (Hilary term)

- (1) In the second year, Pure Mathematics (Year 2) is taken which replaces the old syllabus C3 and C4. For statistics, gone are the Poisson distribution, the continuous uniform distribution, and hypothesis testing for the normal distribution. For mechanics, additions are moments applied to ladder problems, and two-dimensional projectiles (both previously in M2).
- (2) The syllabus is covered over the Hilary term (11 weeks).
- (3) The book has a brown cover and is Harry Smith, *Edexcel A level Mathematics Statistics & Mechanics Year 2*. Pearson, July 2017.
- (4) Paper 3 is two hours and covers the final 33% of the marks.

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