Suggested order of teaching – HL

This is a planning document that is meant to be amended. The dates are not fixed and should be adapted to fit the calendar provided by your school.

Year 1

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| **Wk** | **Unit** | **Topics** | **Student book chapter(s)** | **T&L resource(s)** |
| 1 | 1 | Arithmetic S&S, Geometric S&S, Infinite | 2 (Core),  1 (HL) |  |
| 2 | 1 | Arithmetic S&S, Geometric S&S, Infinite | 2 (Core),  1 (HL) | Fibonacci PPT, TED talk |
| 3 | 1 | Exponents & Logs, Complex numbers | 1 (HL),  6 (HL) | Allowance payments problem |
| 4 | 1 | Exponents & Logs, Complex numbers | 1 (HL),  6 (HL) | Activity: The mathematics of credit |
| 5 | 1 | Modulus argument | 6 (HL) |  |
| 6 | 1 | Matrices | 3 (HL) |  |
| 7 | 1 | Matrices | 3 (HL) |  |
| 8 |  |  |  |  |
| 9 | 2 | Straight line geometry, Function notation | 3, 4 (SL) | Activity: Linear programming |
| 10 | 2 | Graphs of functions (Tech) | 3, 4 (SL) | Activity: Big wheel |
| 11 | 2 | Maximising, Modelling | 12, 13 (SL) | Activity: Bacterial growth |
| 12 | 2 | Transforming functions | 5 (HL) | Activity: Functions transformations |
| 13 | 2 | Composite functions, Inverse functions | 5 (HL) |  |
| 14 | 2 | Sinusoidal models | 4 (HL) |  |
| 15 | 2 | Logistic models | 1 (HL) |  |
| 16 |  |  |  |  |
| 17 | 3 | Sine & Cosine rules, Applications | 5 (SL),  4 (HL) | Heron's formula for the area of a triangle PPT |
| 18 | 3 | Unit circle | 5 (SL),  4 (HL) | Activity: Distances on Earth |
| 19 | 3 | Radians, Arc lengths, Area of sectors | 5 (SL),  4 (HL) | Activity: Trigonometric (circular) graphs |
| 20 | 3 | Inverse functions | 5 (HL) | Activity: Fourier Waves |
| 21 | 3 | Perpendicular bisectors, Voronoi diagrams | 14 (SL) | Voronoi diagrams PPT |
| 22 | 3 | Vectors | 2 (HL) |  |
| 23 | 3 | Vectors | 2 (HL) |  |
| 24 | 3 | Graph Theory | 7 (HL) | Activity: Seven bridges of Königsberg |
| 25 |  |  |  |  |
| 26 | 4 | Data sampling | 6, 15 (SL) | Misleading data PPT |
| 27 | 4 | Histograms, Cumulative Freq. | 6 (SL) | Activity: Statistical analysis project |
| 28 | 4 | Measures of central tendency, Chi-square test | 15 (SL)  9 (HL) | Activity: Statistical analysis project |
| 29 | 4 | Linear correlation, non-linear regression | 15 (SL)  9 (HL) | Activity: Statistical analysis project |
| 30 | 4 | Probability | 7 (SL)  8 (HL) |  |
| 31 | 4 | Normal Distribution | 8 (SL), 9(HL) |  |
| 32 | 4 | Binomial Distribution | 8 (SL), 9(HL) |  |
| 33 | 4 | Poisson distribution | 8 (SL), 9(HL) |  |
| 34 | 4 | Markov chains | 8 (SL), 9(HL) | Markov chains and transition matrices PPT |
| 35 |  | Exams & Exploration |  |  |
| 36 |  | Exams & Exploration |  |  |

Year 2

| **Wk** | **Unit** | **Topics** | **Student book chapter(s)** | **T&L resource(s)** |
| --- | --- | --- | --- | --- |
| 1 |  | Exploration |  |  |
| 2 | 5 | Limits, Rate of change | 9 (SL)  10 (HL) | Calculus: What is rate of change PPT |
| 3 | 5 | Increasing/Decreasing, Tangents & Normals | 9 (SL)  10 (HL) |  |
| 4 | 5 | Second derviative | 16 (SL)  10 (HL) |  |
| 5 | 5 | Integration | 10, 16 (SL)  11 (HL) |  |
| 6 | 5 | Area under curve, Volume of revolution | 10, 16 (SL)  11 (HL) |  |
| 7 | 5 | Maximum/Minimum points | 16 (SL)  10 (HL) |  |
| 8 | 5 | Kinematics, Second derivative (cont.) | 16 (SL)  12 (HL) | Calculus: What is rate of change PPT |
| 9 | 5 | Optimisation | 16 (SL)  11 (HL) | Activity: What is optimization? |
| 10 | 5 | Applications/past-paper questions |  | Economics PPT |
| 11 | 5 | Euler’s method | 13 (HL) | Euler’s method in Excel PPT |
| 12 | 5 | Differential equations | 13 (HL) |  |
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