| **DATE** | **Pure – 2 lessons (3hrs)** | **h/w** | **Applied 1 lesson (1.5 hrs)** | **h/w** | | **Unit Test** | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 13th Sept | **1st lesson**: Introduction to course. Revision for essential skills test which will be next lesson  **2nd lesson**: Essential skills test.  **3rd lesson**: Test back, advice and target setting continued, Laws of indices review. | | | **Targets sheets** | |  | |
| 20th Sept | **Ch1** Surds: simplifying and rationalising denominators. 1 Lesson  **Ch2** Quadratics: factorising and formula. | Essential Skills targets sheets | **Ch8 Intro to Mechanics –** Quantities (vector and scalar) units, velocity, speed, acceleration, weight. | Test  Targets+ Mech 1 | |  | |
| 27th Sept | **Ch2** Quadratics continued: completing the square, graphs, discriminant  **Ch3** Simultaneous equations: linear, quadratic, graphical solutions. | Pure 1 | **Ch9** Kinematics – graphs of vel/time, disp/time. Representation of area and gradient. | Mech 2 | |  | |
| 4th Oct | **Ch 3** Inequalities – linear, defining regions. Quadratic modelling. (Ex 2H) | Pure 2 | **Ch9** SUVATs – derivation and horizontal motion | Mech 3 | | P1U2 | |
| 11th Oct | **Ch4** Graphs – quadratic, cubic, quartic, reciprocal (a/x and a/x2).  Graph transformations | Pure 3 | **Ch9** SUVATs – vertical motion | Revision | | M1U7 | |
| 18th Oct | **Benchmark 1 (Mainy Pure) –** Tests to be completed in the first lesson of the week. It is very unlikely that we will be able to return them or release the mark scheme until after half term. | | | Read Ch1  Stats 6 Mech 4 | | S1U1 | |
| **HALF TERM** | | | | | | | |
| **DATE** | **Pure** | **h/w** | **Applied** | **h/w** | | **Unit Test** | |
| 1st Nov | **Ch4** More Transformations  Points of intersection of graphs  **Ch5** Coordinate geometry – straight lines, length, gradient, parallel/perpendicular | Pure 4 + Targets | **Ch2** Mean, median, mode from raw data and from frequency tables, interpolation. Brief intro to LDS. Use LDS questions. | Stats 1 | |  | |
| 8th Nov | **Ch5** equation of a straight line, tangents, perpendicular gradients, problem solving | Pure 5 | **Ch2** Standard deviation, variance.  More on LDS Use LDS questions. | Stats 2 | |  | |
| 15th Nov | **Ch6** Equation of a circle, midpoint, circle theorems | Pure 6 | **Ch2** Coding. Use LDS questions. | Stats 3 | |  | |
| 22nd Nov | **Ch6** Geometric problems with circles and straight lines | Pure 7 | **Ch3** Diagrams for single variable, frequency polygons, box plots quartiles (outliers) | Stats 4 | | P1U1  S1U2 | |
| 29th Nov | **Ch7** Algebraic division and equivalent, factor theorem | Revision | **Ch3** Histograms (and CF diagrams) | Stats 5 | |  | |
| 6th Dec | **Benchmark 2 (pure and applied) –** Pure to be in lesson 1 and applied in lesson 2 or 3. tbc | | | Pure 8 | |  | |
| 13th Dec | **Ch8** Pascal’s triangle  Binomial expansion | Pure 9  +Targets | **Ch5** Probability: Venn diagrams including ∩ and U notation. (Y2 Ch2.1) | Stats 7  Test Targets | | P1U3  P2U5 | |
| **CHRISTMAS** | | | | | | | |
| **DATE** | **Pure** | **h/w** | **Applied** | **h/w** | **Unit Test** | |
| Tues 4th Jan | **Y2 Ch 4:** Binomial Expansion continued  **Ch 7** Proof | Pure 10  Test Targtets | **Ch5** Tree diagrams, mutually exclusive and independent events | Stats 8 | S1U3 | |
| 10th Jan | **Ch11** Vectors – column, unit, magnitude and direction,addition,multiplication by scalar | Pure 11 | **Y2 Ch2** Probability  2.2 and 2-3 conditional probability | Stats 9 | P1U5 | |
| 17th Jan | **Ch11** Position vectors, distance between two points, geometrical problems | Pure 12 | **Ch2** Probability  2.4 – 2.5 Addition and multiplication rules, more venn and tree diagrams | Stats 10 | S2U2 | |
| 24th Jan | **Y2: Ch 12:** Vectors. Not 12.4 | Pure 13 | **Ch6** DRVs, Intro to the binomial | Stats 11 |  | |
| 31st Jan | **Ch12** Differentiation – definition, notation, differentiation of polynomials from first principles and general result for xn. Gradients | Pure 14 | **Ch6** Binomial distribution –finding probabilities, cumulative probabilities | Stats 12 | S1U4 | |
| 7th Feb | **Ch12** Increasing decreasing functions, tangents, normals  turning points, the second derivative | Pure 15 | **Ch10** Forces and Newton’s Laws – resultant forces. Types of force (10.1 and 10.3) | Mech 5 |  | |
| **HALF TERM** | | | | | | |
| **DATE** | **Pure** | **h/w** | **Applied** | **h/w** | **Unit Test** | |
| 21st Feb | **Ch13** Integration – the anti-derivative  Definite integration. Simple areas including curve below x-axis  **BENCHMARK 3 PURE IN LAST LESSON** | Pure 16 | **Ch10** Forces as vectors (Y1 10.2, Y2 12.4)  Motion in 2 dimensions (10.4)  **BENCHMARK 3 PURE IN LAST**  **LESSON** | Mech 6 |  | |
| 28th Feb | **BENCHMARK 3 APPLIED IN FIRST LESSON**  **Ch13** Integration – more complex areas  **Ch 12** Differentiation - optimisation problems | Revision | **BENCHMARK 3 APPLIED IN FIRST LESSON**  **Ch10** Connected particles, lifts and caravans(10.5) | Revision | P1U6  P1U7 | |
| 7th Mar | **CATCH UP WITH PREVIOUS TOPICS, TEST REVIEWS, START ONE TO ONES** | | | Pure 17  Mech 7 |  | |
| 14th Mar | **Ch9** Trigonometry - proof and use of sine, cosine rule and area of triangle.  **Ch10** (Transformations of) Trig Graphs | Pure 18  Targets | **Ch10** Connected particles, pulleys (10.6) | Mech 8  Targets | M1U8 | |
| 21st Mar | **Ch 10** Solving simple Trig Equations  Derivation of trig identities  Solving more complex trig equations | Pure 19 | **Ch11** Kinematics 2 – Functions of time, using differentiation, maxima and minima | Mech 9 |  | |
| 28th Mar | **Ch 10** Proving trig identities.  **Ch14** Exponential fnctions, graphs of ax. | Pure 20 | **Ch11** Kinematics 2 - Integration | Mech 10 +  correlation chapter Stats 13 | P1U4  M1U9 | |
| **EASTER** | | | | | | |
| **DATE** | **Pure** | **h/w** | **Applied** | **h/w** | **Unit Test + Papers** | |
| Tues 19th April | **Ch 14**  Derivation of y=ex and its properties. Transformations of exponential graphs.  Exponential modelling. | Pure 21  Practice Paper A | Finish off **Ch11**  **Ch7** Hypothesis testing – sampling, null and alternative hypotheses, one and two tailed tests, **including reference to p-values** | Stats 14  Practice Paper E |  | |
| 25th Apr | **Ch14** Logarithms, laws of logs and ln  Solving log and exponential equations. | Pure 22  Practice Paper B | **Ch7** Hypothesis testing – significance levels and critical regions. Actual Significance. | Stats 15  Practice Paper F |  | |
| Tues 3rd May | **Ch 14** Linearising | Pure 23  Practice Paper C | **Ch7** Finish off Hyp Testing | Practice Paper G | P1U8  S1U5 | |
| 9th May | Test revision and preparation | Practice Paper D | Test revision and preparation | Practice Paper H |  | |
| 16th May | Test revision and preparation | AS Pure Specimen | Test revision and preparation | AS Applied Specimen |  | |
| 23rd May | **Benchmark 4 – Students should revise all first year work. B4 will assess most, but not all of these topics (it will not assess any second year topics)** | | |  |  | |
| **HALF TERM** | | | | | | |
| **DATE** | **Pure THIS LAST HALF TERM IS NOT YET CONFIRMED!** | **h/w** | **Applied** | **h/w** | **Unit Test** | |
| 6th June | **Ch3** Series  3.1, 3.2 Arithmetic sequences and series including Sn proof. | Pure 24  + Targets | **Y1 Ch4:** Correlation +  **Y2 Ch 1:** 1.1 Linearising | Stat 16  + Targets |  | |
| 13th June | **Ch3** Series  3.3-3.5 Geometric sequences and series including Sn proof. Sum to infinity | Pure 25 | **Ch1:** 1.2 PMCC and 1.3 Hyp testing for zero correlation, **including p-values** | Stat 17 | S2U1 | |
| 20th June | **Ch3** Series  3.6, 3.7, 3.8 sigma notation (whilst revising APs and GPs). Recurrence relations and modelling | Pure 26 | **Ch3** Normal  3.1-3.2: Definition and finding probabilities with calculator | Stat 18 | P2U4 | |
| 27th June | **Ch1:** Partial fractions including algebraic division and involving binomial expansion | Pure 27 | **Ch3** Normal  3.3: Inverse normal function (on calc) | Stat 19 | P2U2 | |
| 4th July | **Ch 1**: Proof | Pure 28  Summer Work | Party! |  |  | |
| **THE END** | | | | |  | |