Key Stage 5 Curriculum Map 2019 - 2020

Term 2

Subject: Mathematics		Year: 13	
Focus/Topic		**UAE Links**	**Home Learning / Reading**
Week 1 • Integration using partial fractions, odd and even powers of sin, cos and tan • Introduce the Normal probability distribution, notation and parameters • Standardised Normal random variable using the table to find probabilities • Vectors in 3D, I j and k unit vectors, variable acceleration problems in vector form using differentiation and integration			See relevant textbook chapters
Week 2 • Integration to find volumes of revolution • Introduce first order differential equations with variables • Finding probabilities and finding Z and X values using the Normal tables • Using variable acceleration with F = ma and reminder of resolving and using 2nd Law in problem solving			
Week 3 • Variables separable and finding the constant of integration • Finding μ or σ or both in Normal distribution • Projectiles splitting the motion to horizontal and vertical components, terminology and notation			
Week 4 • Forming differential equations, growth and decay, naturally occurring • Differential equations and their solution • Sum of Independent Normal Random Variables • Equation of trajectory and Range for projectiles			
Week 5 -6		Assessment Week	
Mid Term Break			
Week 7 • Numerical Methods – change of sign to find root in an interval, • Iteration formula and its use to find roots of equations approximate values • Exponential Distribution pdf, mean and variance, link with continuous probability distributions • Work Energy Power, Calculation of work done against resisting force			See relevant textbook chapters
Week 8 • Approximate areas under curves using the mid ordinate rule and Simpsons Rule • Link the exponential distribution to the Poisson, No memory property • Power is rate at which work is being done (driving force D) P = Dv - Energy (Potential, Kinetic)			

Week 9 • Vectors, notation and arithmetic, position vectors in 3D, parallel vectors, unit vectors, magnitude of a vector • Estimation, biased and unbiased estimators for population parameters • Work Energy principle and conservation of mechanical energy		
Week 10 • Properties of a line joining two points, vector equation of a straight line, intersecting lines • The sample mean and sampling distribution of mean • Uniform circular motion, angular velocity and acceleration, notation • Motion in a horizontal circle		See relevant textbook chapters
Week 11 • Scalar product of 2 vectors, angle between vectors, perpendicular vectors • Central Limit theorem • The conical pendulum		
Spring Break		