

**Curriculum Overview: A-Level P.E. Year 13 – Exercise Physiology and Biomechanics**

Term / Length of Unit	Outline	Assessment	Home Learning	Resources	Knowledge/Skills End Points	Reading/ Literacy
Autumn 1	<p><u>Biomechanical Principles</u>                      3.2.2.1                      Levers 3.2.2                      &amp;                      Linear Motion 3.2.2.3                      &amp;                      Angular Motion 3.2.2.4                      &amp;                      Projectile Motion 3.2.2.5                      &amp;                      Fluid Mechanics 3.2.2.6</p>	<p>Progress: Home works, exam questions, class work.</p> <p>Final: EOU Tests</p>	<p>Continuous ranging from exam Q's, mind maps, topic on a page etc.</p> <p>1 piece to be set per lesson                      Apply It &amp; Practice It                      Placemats</p>	<p>Full SOL and resources in folder numbered based on lessons.</p> <p>Levers: Folder 35</p>	<p><b>Knowledge:</b></p> <p>To be able to describe linear motion and the descriptors affecting it.                      To be able to explain definitions, equations and units of vectors and scalars.                      To understand how force and impulse acts on a performer's linear motion.                      To understand graphical representation of linear motion.</p> <p>To be able to describe angular motion and application to Newton's Laws.                      To be able to explain angular motion around axes of rotation.                      To understand the definitions, calculations and units of measurement for angular motion descriptors.                      To be able to explain the relationship between moment of inertia, angular velocity and momentum.</p> <p>To be able to describe the factors affecting fluid mechanics and projectile motion.                      To understand the vector components of a parabolic flight.                      To explain factors affecting drag and apply to sporting situations.                      To evaluate the impact of the Bernoulli principle on an object.</p>	<p>Guided reading                      Use of interpretations / contemporary evidence                      Core definitions of command words</p> <p><b>Subject Specific Words:</b></p> <p><b>Analyse</b>  <b>Apply</b>  <b>Explain</b>  <b>Evaluate</b>  <b>Describe</b>  <b>Define</b>  <b>Compare</b>  <b>Contrast</b>  <b>Identify</b>  <b>Justify</b></p> <p><b>Academic Vocabulary:</b></p> <p>Inertia                      Acceleration                      Reaction                      Force                      Vector                      Linear                      Displacement                      Velocity                      Momentum                      Mechanical Advantage                      Fulcrum                      Angular                      Projectile                      Bernoulli's Principle</p>

					<p><b>Skills:</b> Understanding of questions and how to structure and answer exam style questions. Use of 'scripts' to scaffold exam responses</p>	
Autumn 2	<p><u>Exercise Physiology 3.2.1</u></p> <p>Injury Prevention &amp; Rehabilitation 3.2.1.3 &amp; Diet &amp; Nutrition and their effect on Physical Activity &amp; Performance 3.2.1.1 &amp; Preparation &amp; Training Methods in relation to maintaining Physical Activity &amp; Performance 3.2.1.2</p>	<p>Progress: Home works, exam questions, class work.</p> <p>Final: EOU Tests: Injury Prevention Diet Specialised Training</p>	<p>Continuous ranging from exam Q's, mind maps, topic on a page etc.</p> <p>1 piece to be set per lesson</p>	<p>Full SOL and resources in folder numbered based on lessons.</p> <p>Injury Prevention: Folder 1-5</p>	<p><b>Knowledge:</b> To understand common acute and chronic sports injuries. To describe injury prevention methods To be able to explain different injury rehabilitation methods. To describe the process of recovery from exercise and methods with which to do this. To describe the benefits of sleep and nutrition to injury recovery</p> <p>Identify different ergogenic aids. Discuss the importance of water to athletes. Explain the concept of glycogen loading. Evaluate the benefits and drawbacks of ergogenic aids to performers. Identify different sports supplements. Discuss the influence of athlete's diet on optimal body weight. Evaluate the benefits and drawbacks of sports supplements.</p> <p>To understand key data terms use in field testing. To describe the effects and benefits of a warm up and cool down. To understand the principles of training that a performer should use to increase fitness.</p>	<p>Guided reading Use of interpretations / contemporary evidence Core definitions of command words</p> <p><b>Subject Specific Words:</b></p> <p><b>Acute</b> <b>Fracture</b> <b>Chronic</b> <b>Tendonitis</b> <b>Rehabilitation</b> <b>Nutrition</b> <b>Ergogenic Supplements</b> <b>Optimal</b> <b>Quantitative</b> <b>Qualitative</b> <b>Validity</b> <b>Reliability</b> <b>Proprioceptive</b> <b>Neuromuscular Facilitation</b> <b>Periodisation</b> <b>Micro/Meso/Macro – cycle</b> <b>Tapering</b> <b>Transition</b></p>

					<p>To understand the different methods of training used in sport and the most suitable method of training for specific activities. To describe periodisation and the cycles and phases that an individual may follow as part of a training year.</p> <p><b>Skills:</b> Understanding of questions and how to structure and answer exam style questions. Use of 'scripts' to scaffold exam responses</p>	
Spring 1	<p>NEA Analysis of performance Identification of weakness Cause(s) of Weakness Corrective Measure(s)</p>	<p>Progress: Coursework Drafts</p> <p>Final: Completed NEA document</p>	<p>Use of theory work to supplement coursework creation</p>	<p>Exemplar documents</p>	<p><b>Knowledge:</b> AO1: Demonstrate knowledge and understanding of the factors that underpin performance and involvement in physical activity and sport. AO2: Apply knowledge and understanding of the factors that underpin performance and involvement in physical activity and sport. AO3: Analyse and evaluate the factors that underpin performance and involvement in physical activity and sport.</p> <p><b>Skills:</b> AO4: Demonstrate and apply relevant skills and techniques in physical activity and sport. Analyse and evaluate performance.</p>	<p>Guided reading Use of interpretations / contemporary evidence Core definitions of command words</p> <p><b>Subject Specific Words:</b></p> <p>Performance Coach Tactics Strategies</p> <p><b>Academic Vocabulary:</b></p> <p>Analyse Apply Explain Evaluate Describe Define Compare Contrast Identify Justify</p>

Spring 2	Energy Systems 3.1.1.6	<p>Progress: Home works, exam questions, class work.</p> <p>Final: EOU Tests</p>	<p>Continuous ranging from exam Q's, mind maps, topic on a page etc.</p> <p>1 piece to be set per lesson</p>	<p>Subject Specific Vocabulary</p> <p>Numbered Folders</p> <p>Exemplar Documents</p>	<p><b>Knowledge:</b>  To understand Aerobic energy system (Glycolosis, Krebs/citric acid cycle, beta oxidation, electron transport chain).  Anaerobic energy systems (ATP-PC system, anaerobic glycolytic system).  Consideration for physical activity and sport of different intensities and durations.  Differences in ATP generation between fast and slow twitch muscle fibre.  EPOC - Oxygen consumption during recovery (excess post-exercise oxygen consumption EPOC).  Measurements of energy expenditure. – Indirect calorimetry.  Lactate sampling. VO<sub>2</sub> max test.  Respiratory exchange ratio (RER).  Impact of specialist training methods on energy systems. - Altitude training. High Intensity Interval Training (HIIT). Plyometrics. Speed Agility Quickness.</p> <p><b>Skills:</b>  Understanding of questions and how to structure and answer exam style questions.  Use of 'scripts' to scaffold exam responses</p>	<p>Guided reading  Use of interpretations / contemporary evidence  Core definitions of command words</p> <p><b>Academic Vocabulary:</b></p> <p>Glycolytic  Aerobic  Anaerobic  Oxidative  Krebs' Cycle  Electron Transport Chain  ATP  Phosphocreatine  EPOC  Lactate  Indirect Calorimetry  Altitude  Plyometric  Respiratory exchange ratio (RER)</p>
Summer 1	Preparation for Summer 2021 Exams Paper 1 and Paper 2	Questioning Lesson Tasks HL Past Papers	Exam Questions Past Papers Revision Tasks	PPTs Exam Questions and Exam Papers	<p><b>Knowledge:</b>  To reinforce knowledge and understanding of the Year 12 and 13 Content to prepare for Summer 2021 Exams.</p>	<p>Guided reading  Use of interpretations / contemporary evidence  Core definitions of command words</p>

Summer 2	Preparation for Summer 2021 Exams Paper 1 and Paper 2	Questioning Lesson Tasks HL Past Papers	Exam Questions Past Papers Revision Tasks	PPTs Exam Questions and Exam Papers	<b>Knowledge:</b> To reinforce knowledge and understanding of the Year 12 and 13 Content to prepare for Summer 2021 Exams.	Guided reading Use of interpretations / contemporary evidence Core definitions of command words
----------	-------------------------------------------------------	--------------------------------------------------	-------------------------------------------------	----------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------