Year 12 A Level Physical Education Cycle 1 – Section A: Applied Anatomy and Physiology (2 hrs per week of teaching time)

Week	Topic	Knowledge to Master and Format of Mastery	Location of Key Knowledge	Knowledge Application Tasks for Mastery
1. Cardiovascular System	**The structure of the heart and Cardiac conduction system**. **The Vascular System**	• The cardiac cycle (pathway of blood around the body). • Chambers of the heart, major blood vessels going to and from the heart, and valve names. • The role of the **Sino-atrial node**, the **Atrioventricular node**, the **Bundle of His**, and the **Purkinje Fibres**. • The **pulmonary system** takes blood to the lungs from the heart and to the heart from the lungs. • The **systemic system** takes blood to the body from the heart and from the body to the heart. • There are 5 types of blood vessels, these are **Arteries**, **Arterioles** (small arteries), **Capillaries**, **Venules** (small veins), and **Veins**. These all differ slightly in structure.	 	• Explaining the route of blood around the body, starting and ending at the same point. • Write an explanation for how the Heart beats, including all the key pats of the process. • Analyse the structure of the blood vessels and relate these structures to the role of the blood vessel.
2. Cardiovascular System	**Transportation of oxygen**	• How **oxygen** is transported around the body and it's relationship **with Blood pressure**. • **Systolic** and **diastolic** blood pressure • Blood returning to the hear is called **Venous return** and how this occurs • **Starlings law** (higher the venous return the higher stroke volume is) • **Vascular shunt mechanism** (caused by **Vasoconstriction** and **Vasodilation**) • Role of **Haemoglobin** and **Myoglobin** in the transportation of oxygen • The **Oxyhaemoglobin dissociation curve** and the **Bohr shift**.	 	• Explain how oxygen transport is affected by blood pressure and the difference between systolic and diastolic pressure. • Explain the role of Haemoglobin and myoglobin in the transportation of oxygen and relate to the Oxyhaemoglobin dissociation curve and the Bohr shift.
3. Cardiovascular System	**Heart Rates Values and Graphs.** **Heart Rate Control**	• Understanding **Cardiac Output**, **Heart Rate** and Stroke Volume, and how they change during exercise. • Being able to interpret the different section of a heart rate graph. • **Anticipatory rise**, **steady state**, **recovery**. • What is **Cardiovascular drift,** when and why does it occur? • Heart rate is controlled through the **Neural control mechanism**, **Chemoreceptors**, **Baroreceptors**, **Proprioceptors**, **Hormonal control mechanism**. • **Sympathetic nervous system** (speeds things up), **parasympathetic nervous system** (slows things down).	 	• Explain the terms Cardiac Output, Heart Rate, and Stroke Volume. • Draw a label the different sections of a Heart Rate graph for a sport of your choice. • Explain your reasoning for drawing the graph the way that you have.
4. Cardiovascular System	**Effects of Exercise on Cardiovascular System**	• Effects on health including **heart disease**, **high blood pressure**, effects of **cholesterol**, and **stroke**. • Effects on fitness (**cardiac output**-trained vs untrained individuals, effects of **maximal** and **submaximal** exercise). • What is **Arterio-venous oxygen difference** and how does training effect this? • Long term changes to the Cardiovascular system as a result of exercise including **Cardiac Hypertrophy** and **Bradycardia**.	 	• Write a report on factors that can affect the health and fitness of the Cardiovascular system. • How would Cardiac Hypertrophy impact the performance of an endurance athlete.
5. Respiratory System	**Structure of Respiratory System** **Mechanics of breathing** **Gaseous Exchange**	• Pathway air takes from outside the body through the respiratory system to the alveoli. (**Nose/Mouth**, **Pharynx**, **Larynx**, **Trachea**, **Bronchi**, **Lungs**, **Bronchioles**, **Alveoli**) • The role of air pressure in the process of breathing and how the body changes this pressure to cause air to move in and out of the body. Role of the **intercostal muscles and diaphragm**. • How and where gaseous exchange occurs in the body, and the role of partial pressure in this process. **Gaseous exchange** at the **muscles** and at the **alveoli**.	 	• List the pathway of air • Draw and label two diagrams to show how the process of breathing in and out occurs. • Draw and label a diagram, and explain how gaseous exchange occurs in the muscles and alveoli.

Year 12 A Level Physical Education Cycle 1 – Section A: Applied Anatomy and Physiology (2 hrs per week of teaching time)

Week	Topic	Knowledge to Master and Format of Mastery	Location of Key Knowledge	Knowledge Application Tasks for Mastery
6. Respiratory System	**Lung Volumes** **Neural and Chemical Control**	• Understanding of lung volumes and the impact of and on physical activity and sport, these include **Residual Volume**, **Expiratory Reserve volume**, **Inspiratory Reserve Volume, Tidal Volume**, and **Minute Ventilation**. What happens to these values during exercise, and interpretating a **Spirometer trace**. • How **Pulmonary Ventilation** (breathing) during exercise is controlled. **Neural control/chemical control/hormonal control**. Use of **Chemoreceptors**, **Proprioceptors**, **Baroreceptors**. Link to **Parasympathetic** and **Sympathetic** nervous system (refer to knowledge gained in week 3 of cycle 1.		• Draw and label a spirometer trace, defining all the lung volumes. • Explain how breathing is controlled with link to the Parasympathetic and sympathetic nervous system.
7. Respiratory System/ Musculoskeletal System	**Impact of poor lifestyle choices on the respiratory system.** **The Muscular System** **The Skeletal system**	• Effects of **Smoking** on the respiratory system, with links to **Chronic Obstructive Pulmonary disease (COPD)**. • **COPD** is a long term progressive disease of the lungs that causes shortness of breath. • **Carbon monoxide** and it's effect on **Oxygen**'s ability to combine with **Haemoglobin**. • Identify muscles of the body, including the specific names for each of the Quadricep (**Rectus femoris**, **Vastus lateralis**, **Vastus medialis**, **Vastus Intermedialis**) and Hamstring muscles. • Identify the bones of the body, including the specific names for each section of the Vertebral Column (**Cervical**, **Thoracic**, **Lumbar**, **Sacrum**, **Coccyx**)		• Write a report on the effects of smoking on the respiratory system. • Identify all the bones and muscles in the body (on this syllabus).
8. Musculoskeletal System	**Joints and movements** **Planes and Axes**	• **Ball and socket** joints and **Hinge** joints, and the movements they allow. • Movements types are; Flexion, extension, plantar-flexion, dorsi-flexion, hyper-extension, adduction, abduction, horizontal adduction, horizontal abduction. • Planes are; **Sagittal** plane, **frontal** plane, and **transverse** plane. • Axes are; **Transverse** axis, **Sagittal** axis, and **Longitundinal** axis. • The movements that occur in these planes and round these axes.		• Link the types of movements to the joints that allow these movements. • Explain which movements link with which plane and axis.
9. Musculoskeletal System	**Antagonistic pairs** **Muscle Contractions**	• Muscles work in pairs. The role of the **agonist** and the role of the **antagonist**. • Identify different pairs of muscles in the body, and relate to the different joint movements. • Identify which muscle is the agonist and which is the antagonist for each movement. • Explain the different types of contractions; **Isotonic** and **Isometric**. • Know the difference between **Isotonic concentri**c and **Isometric eccentric** contractions. • Identify the types of contractions happening in different movements		• Explain how muscles work in pairs, giving some examples of sporting movements, identifying agonists and antagonists. • Explain the types of contractions occurring in different sporting movements
10. Neuromuscular System	**Muscle Fibre Types** **The Motor unit**	• Know that there are three types of muscle fibres; **Slow oxidative** (**Type I**), **Fast oxidative glycolytic** (**Type IIa**), and **Fast glycolytic** (**Type IIb**). • Characteristics of different muscle fibre types, and the events they are suited to. • **Type I** (endurance based events), **Type IIa** (speed endurance), **Type IIb** (explosive events) • Know that a **motor unit is** made up of a **motor neurone** and it's muscle fibres. A motor neurone is connected to a muscle fibre via a **neuromuscular junction**. • **The all or none law.** • **Wave summation**, **Tetanic Summation** and **Spatial summation** contractions of **motor units.**		• Relate the different types of muscle fibres to sport activities and explain why they are most suitable. • Analyse how the strength of muscle contractions can be increased.
11	**Assessment week**			
12	**Super teaching week**			

Year 12 A Level Physical Education Cycle 1 – Section B: Skill Acquisition (2 hrs per week of teaching time)

Week	Topic	Knowledge to Master and Format of Mastery	Location of Key Knowledge	Knowledge Application Tasks for Mastery
1. Skill, continuums and transfer of skills	**Characteristics of skill** **Classification of skill: the use of continua**	• Definition of **skill** • Characteristics of skill (**ACEFACE**) **A**esthetically pleasing, **C**onsistent, **E**fficient, **F**luent, **A**ccurate, **C**ontrolled, **E**conomical • Be able to classify skills on a **continuum** based on clearly defined criteria • **Open/Closed**, **Discrete/Serial/Continuous**, **Gross/fine**, **Self-paced/externally paced**, **High/low**, **Simple/Complex**.	 	• Explain the characteristics of skill • Draw a number of skill continua and place skills on these.
2. Skill, continuums and transfer of skills	**Justification of skill placement on continua** **Transfer of Learning**	• Understanding that skill placement on a **continuum** can change depending on the situation. • Justifying why a skill is placed where it Is on a continuum. • Understand the different ways that learning one skill can have on the learning of another skill. • **Positive transfer** – helpful to the learning of another skill • **Negative transfer** – hinders the learning of another skill • **Zero transfer** – no impact on the learning of another skill • **Bilateral transfer** – can be transferred across the body • Knowing how to ensure positive transfer	 	• Analyse why an elite performer would find the switch from rower to cyclist easier than if they were to move from tennis to badminton. Use your knowledge of transfer of learning and the following skill continua: open – closed discrete – Continuous simple – complex. (15 marks)
3. Skill classification and Practice	**Methods of presenting practice** **Types of practice**	• Understanding different **methods of presenting** practice; **whole**, **whole-part-whole**, and **progressive part** practice. • Analysing the advantages and disadvantages of each method. • Understanding the different **types** of practice; **massed**, **distributed**, **varied**, and **mental**. • Analysing the advantages and disadvantages of each type.	 	• Explain the difference between methods of presenting practice and types of practice. • Write an essay which explores the advantages and disadvantages of each type of practice.
4. Principles and theories of learning and performance	**The stages of learning** **Purposes and types of Feedback**	• Difference between **learning** (permanent change) and **performance** (temporary occurrence) • Learning is achieved through three stages; **Stage 1** (**The Cognitive stage**), **Stage 2** (**The associative stage**), **Stage 3** (**The Autonomous Stage**). • Understanding and explaining each stage of learning. • What is **feedback** and the different types of feedback that can be given and received. • Difference between different types of feedback; **positive/negative** feedback, **extrinsic/intrinsic** feedback, **knowledge of results/knowledge of performance**. • Linking types of feedback to stages of learning • What is a **learning plateau**, and why do they occur?	 	• Explain the three stages of learning, linking the types of feedback given and received to each stage. • Analyse why a learning plateau occurs and how these could be avoided.
5. Principles and theories of learning and performance	**Methods of Guidance** **Theories of learning**	• Understanding and explaining the different types of **guidance.** • The different types of guidance are; **visual**, **verbal**, **manual**, and **mechanical**. • Providing examples of each type and justifying when they are best to be used. • The different theories of learning are; **Operant conditioning** (including the stimulus response bond), **Observational learning** (Bandura), **Social development theory** (Vygotsky), **Insight learning** (Gestaltist theories). • Analysing each theory, and it's relation to performance.	 	• Evaluate the effectiveness of the different methods of guidance that could be used when teaching a swimmer who is in the cognitive stage of learning. (8 marks) • Analyse how increased media coverage of football can positively impact on the standard of a young player's performance. Refer to Bandura's observational learning theory in your answer. (8 marks)

Year 12 A Level Physical Education Cycle 1 – Section B: Skill Acquisition (2 hrs per week of teaching time)

Week	Topic	Knowledge to Master and Format of Mastery	Location of Key Knowledge	Knowledge Application Tasks for Mastery
6. Information processing	**Information processing model**	• Understanding how information is processed in sporting environments in order to make a decision of what action to perform. • The information processing model (**Input**, **Decision making**, **Output**, and **Feedback**). • Input is collected from senses (External and Internal) also known as **receptor systems** • External senses are **sight** and **hearing**. Internal senses are **Touch**, **Balance**, and **Kinesthesis** • **Decision Making** is based on all the information collected by the senses • Understanding **selective attention**, how it is developed and the benefits of using selective attention. • **Translatory mechanisms** are used to convert the information received into a decision. • **Effector mechanisms** allow the output to take place in the form of a response • Feedback is used during or after the response (refer to week 4). • **Whiting's information processing model** (including; **Environment**, **Display**, **Receptor systems**, **Perceptual mechanism**, **Translatory mechanism**, **Effector mechanism**, **Muscular system output**, and **Feedback**).		• Draw and label the information processing model.
7. Information processing	**Information processing model cont'd**			• Explain Whiting's information processing model including all the different sections.
8. The memory system	**The Working Memory** **Storing Information**	• Understanding the '**memory system**' compiled by **Baddeley and Hitch** in 1978. • **Working memory** performs a number of functions • Working memory consists of a control centre called the **Central Executive** • Working memory has 3 sub-systems called: **The Phonological Loop**, **The Visuospatial sketchpad**, and **The Episodic buffer** • How working memory links with **long-term memory** • Features and functions of the memory system • How information and motor programmes are stored in the long-term memory • Ways of encouraging storage of information include; **Rewards**, **Association**, **mental practice**, **breaking the task down** (**chunking**), **focus**, **repetition of action**, and **chaining**	 	• Baddeley and Hitch's memory model operates within the general information processing model. Analyse how Baddeley and Hitch's model allows a performer to make effective decisions when passing in a game of basketball. **(15 marks)**
9. Schema Theory	**Schema Theory (Schmidt): motor control and learning 1982**	• A schema is a cognitive framework that helps organise and interpret information. • There are **4 parameters** of a schema; **Initial conditions**, **Response specifications**, **Sensory consequences**, **Response outcome**. • Understanding of the 4 parameters of a schema in the process of skill development. • Initial conditions and Response specifications are referred to as **Recall schema** (comes before the action), whilst Sensory consequences and Response Outcome are referred to as **Recognition schema** (happens during the action).		• Explain the 4 parameters of schema in relation to skill development.
10. Response Time	**Response time/Movement time/Reaction time** **Factors affecting Response time**	• **Response time** is, 'The time taken from the onset of a stimulus to the completion of a task. **Response time** = **Reaction time** + **Movement time**. • **Movement time** is, 'The time taken to complete the task • **Reaction time** is, 'The time taken from the onset of a stimulus to the onset of the response. • The difference between **simple reaction time** and **choice reaction time** • Factors the influence response time including **Hicks law**, **The single channel hypothesis**, **The Psychological period** (PRP), **Anticipation** (**Temporal** anticipation and **Spatia**l anticipation) • How response time can be improved including **mental practice** and **improving reaction time**	 	• Explain the difference between simple and choice reaction time. • Analyse how Hick's law and The Psychological refractory period affect response time. Use a specific physical activity in your analysis.
11	**Assessment week**			
12	**Super teaching week**			

Year 12 A Level Physical Education Cycle 1 – Section C: Sport and Society (1 hr per week of teaching time)

Week	Topic	Knowledge to Master and Format of Mastery	Location of Key Knowledge	Knowledge Application Tasks for Mastery
1. Pre-industrial (pre-1780)	**Life in pre-Industrial Britain** **Popular recreation**	• Know the socio-cultural factors of Pre-Industrial society; **Communication and Transport limited**, **Widespread Illiteracy**, **Cruel existence for lower class**, **Limited free time**, **Two class system**, **People lived in the countryside**. • What is popular recreation? • Characteristics of popular recreation; **local and specific**, **used natural resources, simple rules**, **aggressive**, **male dominated**, **wagers were placed by upper class**, '**functional**' (linked to work)		• Write an overview explaining what life was in Pre-Industrial Britain. • Explain what popular recreation is and highlight the key characteristics of it.
2. Pre-industrial (pre-1780)	**Popular recreation activities**	• **Mob football** - played by the lower class, locally played, rural in nature, using a pig's bladder as a ball, played on Holy Days, dominated by males, violent. Became less popular as the 19th Century progressed. • **Real/Royal Tennis** – (Sport of kings), played by upper class males, complex rules, no violence, played in purpose built facilities, using specialist equipment, on-local. • **Athletics (foot racing/pedestrianism)** – competing as messengers, gentry would wager on the competitors, success led to increase social status, gentry would act as patrons and offer prizes.		• Produce a pamphlet which explains the structure and rules of the main popular recreation activities (Mob football, Real Tennis, Athletics)
3. Industrial and post-industrial development of sport (1780-1900)	**Rational recreation** **The Wenlock Olympian games**	• Development of rational recreation – recreation starts to become ordered, logical and structured. • Characteristics of rational recreation – **Respectability**, **Regionally/nationally/regularly played**, **Stringent administration and codification**, **Referees/officials**, **Purpose-built facilities**, **Skills/tactics based**. • 1850 Wenlock Agricultural Reading Society (WARS), formed an Olympian Class. • 1860 the Olympian class become known as the Wenlock Olympian Society. • Dr William Penny Brookes was the driving force behind the Wenlock Olympian Games.		• Analyses the causes that led to popular recreation developing into rational recreation. • Explain the impact that Dr William Penny Brookes had on Sport in Britain.
4. Social and Cultural influences on the development of rational recreation	**The Industrial Revolution**	• Understanding how the Industrial Revolution changed the way people lived their lives. • Initial effects seen as negative (first half of nineteenth century); **Lower classes to urban areas**, **lack of leisure time, lack of income**, **poor health**, **loss of rights**, and **a lack of public provision** • Latterly there were more positive effects (second half of nineteenth century); **Health and hygiene improved, gradual increase in wages and more time for sport**, **a new middle class**, **influence of ex-public schoolboys**, **the values of athleticism, industrial patronage**, **transport and communications**, **cheaper to travel**.		• Write an overview explaining how life changed during the Industrial revolution • Evaluate the impact of the industrial revolution on Sport in Britain.
5. Social and Cultural influences on the development of rational recreation	**Urbanisation** **The transport revolution**	• Understand the impact of urbanisation on the development of many of the sports played today. • Mob games were banned and society became more 'civilised'. • The factors that lead to the development of sports were**; lack of space**, **large working-class populations**, **loss of traditional sports**, **change in working conditions**. • The development of steam trains and railways increased spectator and participation opportunities. • Development of the railways led to; **easer movement for spectators and teams**, **improved access to different parts of the country**, **cheaper train travel**, **and improved access to the countryside**.		• Explain how the development of the transport system in Britain impacted how sport was played and viewed by the population.

Year 12 A Level Physical Education Cycle 1 – Section C: Sport and Society (1 hr per week of teaching time)

Week	Topic	Knowledge to Master and Format of Mastery	Location of Key Knowledge	Knowledge Application Tasks for Mastery
6. . Social and Cultural influences on the development of rational recreation	**Communications** **The influence of the Church**	• There was a gradual improvement of **education** within **Urban industrial societies**. • Improved education led to improved **reading** and **writing** in the **working class** • Improved communications (e.g. **newspapers**) happened as a result of society being more **literate**. • Publications of fixtures and results and the development **role models** and **sporting heroes** led to an increase in the popularity of sport. • The views of the church in **Victorian times** (late nineteenth century) helped to promote sport and recreation. • The church promoted sport because; encouraged social control, **diverted people away from drinking and gambling**, **Church facilities were used as venues**, **a good way of promoting Christian values**, **healthy body/mind**, **help increases congregations**. The Church organised teams, set up clubs and competitions.		• Analyse how improvement in communications impacted the growth of Sport within Britain. • Explain why the Church wanted to get involved with developing Sport in the 19th Century.
7. Social and Cultural influences on the development of rational recreation	**The emergence of the middle classes** **The British Empire**	• Understand how a middle class emerging as a result of urbanisation and industrialisation played a key role in sporting developments. Middle class were often **self made** and had sympathy for the working class so wanted to improve their lives, through **sporting provision**. • Sport provision was improved through; **codification**, **competitions**, **public provision, increased leisure time**, and **move to professionalism**. • Understand how the British Empire influenced the development of sport. • Sport spread through public school boys and university old boys as they became; **Teachers**, **Industrialists /factory owners, Clergy**, Officers in the **British Army, founders of National Governing bodies (NGB's)**.		• Analyse how the emergence of the middle class in the industrial and post-industrial period (1780–1900) impacted on the sport of association football at this time. (8 marks) • Explain how the British Empire impacted the growth of sport across the world.
8. Social and Cultural influences on the development of rational recreation	**Public provision** **Development of NGB's**	• **Public baths** in urban and industrial areas increased opportunities for **working class rational recreation** • Public washing facilities developed to improve **health** and **hygiene** of the population (**the Wash Houses Act of 1846**). Led to **plunge pools** being developed for swimming/recreational use. • Helped with **social control** as kept people away from drinking and violence. • **National Governing bodies (NGB's)** began to form in mid-to-late nineteenth century. The FA in 1863. • NGB's formed as a result of; **Sport becoming more popular**, **more teams and clubs forming**, **more national and international fixtures**, **league and competitions were required**, **nationally agreed rules were required**, **maintenance of the 'amateur ideal'**.		• What was the role of public baths in Sports development in Britain? • Explain the role of National Governing bodies and how they first came into existence.
9. Amateurism and Professionalism	**Amateurism and Professionalism**	• Difference between amateur code and professional code. • Values of amateurism; 'Manliness, Value of health and fitness, Value of rule-regulated activity, high moral integrity. • Understanding positive impacts of amateurism; **amateurs held a higher status that professionals**, **code of amateurism**, **code of ethics**, **belonging to the social elite**, **participation in sport**, **all-rounder**, **'elite performers'**, **the new middle class**.		• Highlight the main difference between amateur and profession athletes. • Explain why amateurs held a higher status than professionals during the 19th Century.
10. Amateurism and Professionalism	**Positive impacts of professionalism** **Twentieth century amateurs v modern day amateurs**	• Professionalism came about due to working class being paid a **wage** for time off representing their factory. • Professionalism developed at the end of nineteenth century; **onset of commercialisation and media coverage**. • Key features of twentieth-century amateurs; **High status**, **Controllers of sport**, **top performers**, **highly moral**. • Key features of modern-day amateurs; lower status, some high level performers, blurring of amateur and professional distinctions, performance at the top level open to all, some receive finance to pay for training expenses		• Outline the positive effects of professionalism on Sport in Britain. • Explain the main differences between Twentieth century and modern day amateurs.
11	Assessment week			
12	Super teaching week			