

# PHYSICAL EDUCATION – BTEC Level 3 Extended Certificate in Sport

## Head of Department

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## Exam Board

Pearson - Edexcel

## Specification

2017 Extended Certificate

### COURSE DETAILS (equivalent to 1 A Level)

#### Year 12 course outline:

Unit 1 - Anatomy and Physiology

Unit 3- Professional Development in the Sports Industry

#### Year 13 course outline:

Unit 2- Fitness Training and Programming for Health, Sport and Well-Being

Unit 4- Sports Leadership

Mandatory content (83%)

External assessment (67%)

#### Higher education courses linked to the subject:

Having studies BTEC Sport you will be able to study Sports Science, Sports Studies, PE teaching, Sport and Fitness, Sports Coaching, Sports nutrition, Sports Psychology

#### Careers linked to the subject:

Possible career options include sports coach, fitness instructor, sports therapist, sports nutritionist, PE teacher, leisure management

## SUMMER WORK FOR INTRODUCTION TO YEAR 12

TASK	TOPIC	Unit 1. Anatomy and Physiology (The Skeletal System)
1.	The effects of exercise and sports performance on the skeletal system	<p>Structure of skeletal system</p> <p>Understand how the bones of the skeleton are used in sporting techniques and actions.</p> <ol style="list-style-type: none"> <li>1) Draw the major bones on to a skeleton to include cranium, clavicle, ribs, sternum, scapula, humerus, radius, ulna, carpals, metacarpals, phalanges, pelvis, vertebral column (cervical, thoracic, lumbar, sacrum, coccyx), femur, patella, tibia, fibula, tarsals, metatarsals.</li> <li>2) Explain the different type of bones – long, short, flat, sesamoid, irregular.</li> <li>3) Areas of the skeleton to include axial skeleton, appendicular skeleton, spine, curves of the spine, neutral spine alignment, postural deviations (kyphosis, scoliosis).</li> <li>4) Explain the process of bone growth – osteoblasts, osteoclasts, epiphyseal plate.</li> </ol>
2.	Function of skeletal system	<p>Explain how the functions of the skeleton and bone types are used in sporting actions and exercise, use these sub titles to assist you (but write about all the different types)</p> <ol style="list-style-type: none"> <li>1) Explain all of the functions of the skeleton when performing sporting techniques and actions: a) supporting framework b) protection o attachment for skeletal muscle c) source of blood cell production d) store of minerals e) leverage f) weight bearing o reduce friction across a joint.</li> <li>2) Explain the main functions of different bone types when performing sporting techniques and actions: a) long bones – provides leverage, red blood cell production b) short bones – weight bearing c) flat bones – protection d) sesamoid bones – reduce friction across a joint.</li> </ol>
3.	Joints - Understand how joints of the upper and lower skeleton are used in sporting techniques and actions.	<p>Under different sub titles please describe each of the joints / key terms and relate to a sporting example – if you wish you can make it into a table</p> <ol style="list-style-type: none"> <li>1) Joints of the upper skeleton (shoulder, elbow, wrist, cervical and thoracic vertebrae).</li> <li>2) Joints of the lower skeleton (hip, knee, ankle, lumbar, sacrum, coccygeal vertebrae).</li> <li>3) Classification of joints – fibrous (fixed), cartilaginous (slightly moveable), synovial (freely</li> </ol>

		<p>moveable).</p> <p>4) Types of synovial joints (ball and socket, condyloid, gliding, saddle, hinge, pivot).</p> <p>5) The bones forming the following joints (shoulder, elbow, wrist, hip, knee, ankle, and their use in sporting techniques and actions).</p> <p>6) Structure and function of components of synovial joints and their use in sporting techniques and actions (joint capsule, bursa, articular cartilage, synovial membrane, synovial fluid, ligaments).</p> <p>7) Range of movement at synovial joints due to shape of articulating bones and use in sporting actions (flexion, extension, dorsiflexion, plantarflexion, lateral flexion, horizontal flexion and horizontal extension, hyperextension, abduction, adduction, horizontal abduction and adduction, rotation, circumduction).</p>
4.	Responses of the skeletal system to a single sport or exercise session	<p>Explain the following using sporting examples to assist you</p> <p>1) Simulated increase of mineral uptake in bones due to weight-bearing exercise.</p>
5.	Adaptations of the skeletal system to exercise	Explain the impact of long-term effects of exercise on sports performance on Skeletal adaptations such as increased bone strength, increased ligament strength.
6.	Additional factors affecting the skeletal system	<p>Explain the impact of the skeletal system on exercise and sports performance and the impact of exercise and sports performance on the skeletal system.</p> <p>1) Skeletal disease – arthritis, osteoporosis, and the effect of exercise in offsetting these conditions.</p> <p>2) Age – young children and resistance training issues stunting bone growth.</p>

#### WIDER READING TO PREPARE FOR COURSE

- Clegg: Exercise Physiology
- Honeybourne, Michael Hill & Helen Moors: Advanced PE & Sport
- James, Thompson & Wiggins: A-Z PE Handbook
- McArdle, Katch, Katch: Exercise Physiology
- Pearson, BTEC Nationals Sport Student Book 1
- Pearson, Revise BTEC National Sport Units 1 and 2 – Revision Guide