Physical Education Studies Stage 1
Work Samples

There are both practical and theory components to this course. In Stage 1 courses, students will participate in two practical lesson per week and one theory lessons.

Example of a 1A PES learning program. (Topics to be covered)

<table>
<thead>
<tr>
<th>Week</th>
<th>Content Area</th>
<th>Content Breakdown</th>
<th>Practical Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 6</td>
<td>Functional Anatomy</td>
<td>• Major functions of the bones</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Classification of bones</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Major bones of the body</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Anatomical planes</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Structure and function of the respiratory system</td>
<td>Badminton Wk 1 - 9</td>
</tr>
<tr>
<td>7 - 9</td>
<td>Motor Learning and Coaching</td>
<td>• Fitts and Posner model – The 3 phases of learning</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Classification of motor skills</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The basic process of coaching / teaching a skill (intro, demo, practice, feedback)</td>
<td></td>
</tr>
<tr>
<td>10 - 15</td>
<td>Exercise Physiology</td>
<td>• Components of health-related fitness</td>
<td>Rec Football Wk 10 - 18</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Components of performance-related fitness</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• Fitness testing</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Characteristics of warm-up and cool-down</td>
<td></td>
</tr>
<tr>
<td>16 - 17</td>
<td>Biomechanics</td>
<td>• The role of biomechanics in improving performance and preventing injury</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Biomechanical analysis through the phases of movement (preparation, action, follow through)</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Sports Psychology</td>
<td>• Mental preparation for physical activities</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• Skills and strategies in team building</td>
<td></td>
</tr>
</tbody>
</table>

Example of a 1A PES assessment outline. (The tasks you will be assessed on).

<table>
<thead>
<tr>
<th>Assessment Type</th>
<th>Type</th>
<th>Task Weighting</th>
<th>Assessment Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance and Response</td>
<td>40% (CC weighting 30-50%)</td>
<td>15%</td>
<td>Task 1 – Performance of Skills in Rec Football</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15%</td>
<td>Task 2 – Part A – Badminton Skills</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10%</td>
<td>Task 3 – Participation in Practical Lessons</td>
</tr>
<tr>
<td>Investigation</td>
<td>30%  (CC weighting 25-35%)</td>
<td>7.5%</td>
<td>Task 2 – Part B - Badminton Coaching</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7.5%</td>
<td>Task 2 – Part C - Badminton Reflective Skills Journal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15%</td>
<td>Task 4 – Health-Related Fitness Profile</td>
</tr>
<tr>
<td>Response</td>
<td>30%  (CC weighting 25-35%)</td>
<td>10%</td>
<td>Task 5 – Test 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20%</td>
<td>Task 6 – Topic Test</td>
</tr>
</tbody>
</table>
Sample 1A PES Assessment Tasks

Assessment task 1: Unit 1A

**TYPE:** Practical performance  
**OUTCOMES:** Outcome 1: Skills for physical activity  
**CONTENT:** Developing physical skills, strategies and tactics  
**UNIT CONTEXT:** Rec Football

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**Task 1: Part A - Skill performance—Rec Football (30 marks) (10%)**

Perform a series of basic and advanced rec football skills.

**Time of assessment**  
Ongoing assessment—Weeks 9 - 16

**What you need to do**  
Perform the following skills from the Curriculum Council AFL support materials (support materials for practical examinations).  
- (a) Handball  
- (b) Drop punt  
- (c) Chest mark  
- (d) Running bounce  
- (e) Overhead mark

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**Task 1 - Part B: Performance of game skills – Rec Football (30 marks) (10%)**

Perform a series of game performance activities.

**Time of assessment**  
Ongoing assessment—Weeks 12 - 16

**What you need to do**

1. Perform the following game scoring skills in a game/modified game.

   **Attacking**  
   - (a) Attacking play puts defenders under pressure  
   - (b) Leading to space  

   **Defending**  
   - (c) Read the play to deny space for the opposition player  
   - (d) Tight marking on opponent  
   - (e) Correct positional play

All skills are assessed on a scale of 0–6, taking into consideration the observation points of each skill as outlined in the practical examination specifications.
Sample 1A PES Assessment Tasks

1A PES Task 4: Health-Related Fitness

<table>
<thead>
<tr>
<th>Task weighting - 15%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total marks – 26 marks</td>
</tr>
</tbody>
</table>

**ASSESSMENT TYPE:** Investigation

**ESSENTIAL CONTENT**
- Improving Physiological Capacity
- Energy for Physical Activity

**LEARNING CONTEXT:** Fitness Testing

This task requires you to prepare a written report on the results of measuring various aspects of your own fitness. The practical aspects of this assignment will be done in pairs with each partner helping to conduct fitness tests on each other then submitting their own report. (26 marks)

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Answer and respond in detail to the following questions. Use the headings given when answering each question in your report.

**a) Fitness**

Explain the term ‘fitness’ and its relationship to a healthy lifestyle, and explain how various factors may affect fitness (2 marks)

**b) Fitness Profile**

Provide a general profile of yourself including height, weight, medical problems, level of activity, and other aspects that may affect your physical activity levels. Indicate which sport, if any, you are currently playing. (3 marks)

**c) Health-Related Components of Fitness**

Explain how each of the 5 components of health-related fitness are essential for your particular sport? Select 7 appropriate physical activity assessments (fitness tests) that will enable you to appraise your fitness levels in relation to the many components of fitness (these tests can be health-related or performance-related). Justify why you selected these specific tests. (14 marks)

**d) Results**

Record and analyse the results of your fitness tests (ie discuss areas of strength and weakness and why this might be the case). Construct an appropriate results table and graph showing your results against normative data (7 marks)

Your work should be typed. Please ensure you adhere to the dates for submission of your work. You will receive some class time to assist you in completion of this task.
11. Complete the table. For each number you need to give the correct name and type of bone.

<table>
<thead>
<tr>
<th>Number</th>
<th>Name of Bone</th>
<th>Type of Bone</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<tr>
<td>6</td>
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<td>10</td>
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<tr>
<td>11</td>
<td></td>
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</tbody>
</table>

17. Explain the 5 most important components of fitness necessary for success in the sport of badminton. Describe each component individually and its importance to the sport of badminton.

7. An effective cool down should continue until the athlete’s heart rate reaches approximately

a) 100 bpm  
b) 150 bpm  
c) 60 bpm  
d) 200 bpm

6. Label the components of the Respiratory System

7. Explain the process of ‘inspiration’ (breathing in). In your answer you should explain the action of the diaphragm, the change in size and the change in pressure of the chest cavity. You may choose to draw a diagram as well.
Example of a 1C PES learning program

Unit description
The focus of this unit is to introduce students to simple movement, biomechanical, physiological, psychological, functional anatomy and motor leaning concepts that provide a basis for assessing and enhancing their own and others’ performance. The understanding of the relationship between skill, movement production and fitness will be further enhanced as students develop and improve.

There are both practical and theory components to PE Studies 1C and 1D. At Manea 2 of the 3 sessions per week are practical and 1 session per week is theory.

THEORY PROGRAM

<table>
<thead>
<tr>
<th>Content Area</th>
<th>Content Breakdown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional Anatomy</td>
<td>• Revision of the skeletal and muscular system</td>
</tr>
<tr>
<td></td>
<td>• Characteristic of skeletal muscle tissue</td>
</tr>
<tr>
<td></td>
<td>• Muscle contraction – origin and insertion points</td>
</tr>
<tr>
<td>Exercise Physiology</td>
<td>• Contribution of different energy systems</td>
</tr>
<tr>
<td></td>
<td>• Categorise activities based on their energy demands</td>
</tr>
<tr>
<td></td>
<td>• Simple tests to measure aerobic and anaerobic capacities</td>
</tr>
<tr>
<td></td>
<td>• Ensuring a safe learning environment and preventing sporting injuries</td>
</tr>
<tr>
<td></td>
<td>• Immediate care of sports injuries - TOTAPS / RICER</td>
</tr>
<tr>
<td></td>
<td>• Extended care and rehab for the injured athlete</td>
</tr>
<tr>
<td>Biomechanics</td>
<td>• Force production</td>
</tr>
<tr>
<td></td>
<td>• Absorption of force – Body and equipment</td>
</tr>
<tr>
<td>Motor Learning and Coaching</td>
<td>• Roles and responsibilities of a coach</td>
</tr>
<tr>
<td></td>
<td>• Leadership – Qualities of a good leader</td>
</tr>
<tr>
<td></td>
<td>• Styles of leadership and their relationship to coaching</td>
</tr>
<tr>
<td>Sports Psychology</td>
<td>• Goal Setting – Short v Long Term</td>
</tr>
<tr>
<td></td>
<td>• Performance v outcome goals SMARTER</td>
</tr>
<tr>
<td>Revision and Topic Test</td>
<td>• 1C content to be revised</td>
</tr>
<tr>
<td></td>
<td>• 1C Topic test</td>
</tr>
</tbody>
</table>

PRACTICAL
Tennis, Netball, Hockey

ASSESSMENT
Follows three major areas:
- Performance and Response (Practical sports skills 30-50%)
- Investigation (Written assignments 25-35%)
- Response (Tests 25-35%)
PT A.

Task: Basic skill performance—tennis (24 marks) (10%)

Perform a series of basic tennis skills.

What you need to do

Perform the following basic skills from the Curriculum Council tennis support materials (support materials for practical examinations).

(a)  forehand groundstroke
(b)  backhand groundstroke
(c)  volley
(d)  serve (flat)

All skills are assessed on a scale of 0–6, taking into consideration the observation points of each skill as outlined in the practical examination specifications.

PT B.

Task 2: Game performance—tennis (30 marks) (10%)

Perform a series of game skills in doubles and singles match situations.

2. Your mark out of 24 will take into account the points below and your ability to display them in a game/modified game.

   Game Play
   (f)  Attacking play places opposition under pressure
   (g)  Exploiting the weaknesses of the opposition

   Scoring and Positioning
   (h)  Keep the correct score, calling out the score before each serve
   (i)  Correct court positioning when returning serve (both singles and doubles)

Resources

Curriculum Council Physical Education Studies Tennis DVD (available from the Curriculum Council)
Curriculum Council Physical Education Studies Tennis support booklet – available from
http://www.curriculum.wa.edu.au/internet/Senior_Secondary/Courses/Physical_Education_Studies#
TEST QUESTIONS

Which of the following pathways for energy production requires oxygen to create ATP?

a) The aerobic pathway  
b) The lactic acid pathway  
c) The protein pathway  
d) The ATP-CP pathway

What does the C stand for in the “RICER” method of injury management?

a) Circulation  
b) Compression  
c) Coronary  
d) Circulation

You have been appointed the coach of an under 8’s hockey team. None of the players have played hockey before and very few of them know each other. Name the style of leadership that would be the most effective in this situation and explain why.

ASSIGNMENT SAMPLE

Task 3: Preventing and treating sporting injuries  Marks - 38  Weighting 20%

Scenario

You are the President of a local Netball club. As part of your duties you are in charge of organising and running an upcoming regional netball tournament. The tournament will be a large event with many players and teams taking part over three days of competition. Your major focus is to provide a safe environment and minimise the incidence of sports injuries.

This assessment task will require you to describe and document the steps you would take to ensure that this tournament is carried out in a safe learning environment.

Part A – (18 marks) – Create a document that outlines the steps you would take as an organiser to ensure that you are providing a safe environment for everyone involved in this tournament.

Part B – (15 marks) – Create a document that provides coaches with information and ideas on how best to prevent sports injuries.

Part C – (5 marks) - Create an A4 fact sheet that describes the correct first aid procedure for a soft tissue injury (the RICER) method. There will be one of these fact sheets at each softball ground.
UNIT CODE 1DPES

Unit description
The focus of this unit is for students to assess their own and others’ movement competencies and identifies areas for improvement. They will build on their knowledge of training principles, nutrition and goal setting concepts to enhance their own and others’ performance in physical activity.

<table>
<thead>
<tr>
<th>Content Area</th>
<th>Content Breakdown</th>
</tr>
</thead>
</table>
| **Functional Anatomy**   | • Identify the types of muscle contractions  
• Types of joints and their associated movements  
• Joint movement and antagonistic pairs of muscles  
• Identify types of movements used in selected sports  
• Muscle fibre types and physical activities |
| **Motor Learning and Coaching** | • Coaching strategies used to consolidate and extend skill development – (whole/part, chaining/shaping, mental/physical)  
• Types of feedback (intrinsic/extrinsic)  
• Relationship between feedback and skill development (KOR/KOP, frontloading/debriefing) |
| **Exercise Physiology**  | • Identifying technical errors in performance (checklists, video etc)  
• Analysing specific skills to improve performance  
• Quantitative measures – (measuring distance / time) |
| **Biomechanics**         | • Identifying technical errors in performance (checklists, video etc)  
• Analysing specific skills to improve performance  
• Quantitative measures – (measuring distance / time) |
| **Sports Psychology**    | • The use of goal setting in coaching programs  
• Links between goal setting and motivation |
| **Revision and Topic Test** | • 1D content to be revised  
• 1D Topic test |

PRACTICAL
Tennis, Netball, Hockey

ASSESSMENT
Follows three major areas:
- **Performance and Response** (Practical sports skills 30-50%)
- **Investigation** (Written assignments 25-35%)
- **Response** (Tests 25-35%)
Task PE Studies Unit 1D - PPAP

Assessment type: Performance/Response Investigation

Outcomes: Outcome 1: Skills for physical activity; Outcome 2: Self-management skills and interpersonal skills for physical activity; Outcome 3: Knowledge and understanding of movement and conditioning concepts for physical activity; Outcome 4: Knowledge and understanding of sport psychology concepts for physical activity

Context: Physical performance and fitness for physical activity

Overview

Task 3: Building a personal physical activity profile 20 marks (15%)

You are going to create a personal physical activity profile (PPAP). You will create your PPAP, complete fitness tests and based on your results design an action plan to improve your fitness and performance. You will then analyse your overall participation and performance in physical activity.

My personal physical activity profile

Develop a personal physical activity profile (PPAP) by investigating your thoughts and feelings as a performer, completing a series of tests and investigating the current and future importance of factors affecting performance in your chosen physical activity and their application in an invasion game. Your PPAP should be in written or electronic form. Use the headings below when writing your profile.

- **Starting out**: Analyse your own behaviours, attitudes and values as a participant in physical activity. Outline the activities you enjoy, how you became involved in your favourite activity and why. (2 marks)

- **The fitness factor**: Identify general fitness and performance requirements of your sport and identify how to measure these key components. Create a battery of 5 fitness tests that are appropriate to your sport and will give reliable, objective and valid measures of your current fitness status. Include a table of your fitness tests used as well as the results. (4 marks)

- **Check it out**: Analyse your fitness test results by distinguishing between the strengths and weaknesses. Pick the one component of fitness that you would like to improve your results in. Set a short term goal for improvement in that fitness component. Be sure to follow the SMART goal setting criteria. (4 marks)

- **Practise makes progress**: Design a training session that will improve that particular component of fitness mentioned in the ‘check it out’ section. Your training session should include specific methods of training that work that particular fitness component and should include a proper warm-up, conditioning phase and cooldown. Include a description of the intensity and duration of the session. (8 marks)

- **Factors affecting personal participation**: Reflect on the factors that influenced your performance and enjoyment of the tournament competition of the class sport you are currently playing. Include both negative and positive factors. (2 marks)
Physical Education Studies Stage 2
Work Samples

There are both practical and theory components to this course. In Stage 2 and 3 courses, students will participate in one practical lesson per week and two theory lessons.

Example 2A PES Learning Program (Topics to be covered)

<table>
<thead>
<tr>
<th>Week</th>
<th>Content Area</th>
<th>Content Breakdown</th>
<th>Practical Context</th>
</tr>
</thead>
</table>
| 1 - 5| Functional Anatomy            | • Skeletal system  
     |                               | • Muscular system  
     |                               | • Musculoskeletal production of movement  
     |                               | • Structure / function of the circulatory system  
     |                               | • Structure / function of the respiratory system  |                   |
| 6 - 7| Motor Learning and Coaching   | • Classification of motor skills  
     |                               | • Phases of motor learning (Fitts & Posner Model)  
     |                               | • Visual, verbal & proprioceptive cues  
     |                               | • Information Processing Model  | Hockey Wk 1 – 16 |
| 8 - 11| Biomechanics                 | • Linear Motion (speed, velocity, acceleration)  
    |                               | • Projectile motion  
    |                               | • Angular motion  
    |                               | • General motion  |                     |
| 12 - 15| Exercise Physiology         | • Immediate / short-term responses to physical activity  
    |                               | • Long-term / chronic adaptations to training  
    |                               | • Energy sources for physical activity (carbs/fats/protein)  
    |                               | • Energy systems and their response to exercise  |                     |
| 16   | Sports Psychology            | • Mental skills for improving performance (motivation, confidence, stress management etc)  
    |                               | • Mental skills used to manage stress, motivation, concentration and arousal.  |                     |

Example 2A PES Assessment Outline (Tasks you will be assessed on)

<table>
<thead>
<tr>
<th>Assessment type</th>
<th>Assessment type weightings</th>
<th>Task</th>
<th>Content</th>
</tr>
</thead>
</table>
| Practical Performance | 30%                       | Task 1  
     |                               | Skill performance and game performance assessment - Hockey  | Developing physical skills, strategies and tactics  |
| Investigation    | 30%                       | Task 2  
     |                                   | Lab Report.  | Functional anatomy, the journey of oxygen through the body  |
|                   |                           | Task 3  
     |                                   | Projectile motion – In-class Essay  | Biomechanics (Range of projectiles)  |
| Response         | 40%                       | Task 4  
     |                               | Mid semester test  | Biomechanics; motor learning and coaching; functional anatomy  |
|                   |                           | Task 5  
     |                               | Exam  | Biomechanics; motor learning and coaching; functional anatomy; sports psychology; exercise physiology  |
Sample 2A Assessment Tasks

Manea Senior College

Assessment task: Units 2A PES

TYPE: Performance and Response

OUTCOMES: Outcome 1: Skills for physical activity

CONTENT: Developing physical skills, strategies and tactics

UNIT CONTEXT: Hockey

Task 1: Part A - Skill performance assessment (30 marks) (15%)

Perform a series of hockey skills.

Time of assessment
Ongoing assessment weeks 1–10
Multiple opportunities to perform skills and drills over weeks 1–10 will be provided

What you need to do

1. Perform the following skills within the identified drills from the hockey external examination support booklet. (Note: This list includes the two skills that will be assessed every year in the external practical (performance) examination undertaken by Stage 2 and Stage 3 students in their final year of schooling).

   - (a) hit
   - (b) slap hit
   - (c) indian dribble
   - (d) drag to eliminate
   - (e) reverse-stick trap

   All skills are assessed on a scale of 1 – 6, taking into consideration the observation points of each skill as outlined in the practical examination specifications

Task 1: Part B Game performance assessment (30 marks) (15%)

Participate in a series of hockey games.

Time of assessment
Ongoing assessment weeks 10 - 16

What you need to do

1. Participate in a game of hockey and perform the following game skills:

   Offensive skills
   - (a) Lead to space to receive pass
   - (b) Correct execution under pressure
   - (c) Attacking play places opponents under pressure

   Defensive skills
   - (a) Channelling attackers wide
   - (b) Correct execution under pressure

   All skills are assessed on a scale of 1–6, taking into consideration the tactical framework as outlined in the practical examination specifications.
Assessment task - PES Unit 2A

TYPE: Investigation

OUTCOMES: Outcome 3: Knowledge and understanding of movement and conditioning concepts for physical activity

CONTENT: Functional Anatomy

UNIT CONTEXT: Cardiorespiratory System

Task 2: Functional Anatomy – Cardiorespiratory System 20 marks 15% of Unit

Explore the structure and function of the cardiorespiratory system, in particular the pathway of oxygen, gaseous exchange, the mechanics of breathing and the circulation of blood.

Time for the task
Two weeks – Some class time may be given but the majority of the assessment will be completed in your own time.

What you need to do:
Imagine that you are a molecule of oxygen that has just been breathed in by an athlete. Describe in detail every step of your journey from the outside air, through the body of the athlete to reach the muscle cell of the gastrocnemius. You then need to imagine you are a carbon dioxide molecule and describe in detail every step of your journey from the gastrocnemius muscle cell to the outside air.

Your answer should include
1. Diagrams where appropriate
2. The correct name and function of every important component passed by each molecule
3. A description of the process of gaseous exchange
4. A description of the mechanics of breathing (inspiration and expiration)
5. A description of the four chambers of the heart
6. An explanation of the pulmonary and systemic circulations of blood

Your work should be typed and submitted prior to the due date below. Please attach a copy of the assessment cover sheet when you submit your work

Sample 2A Test / Exam Questions

6. The input phase of information processing refers to:
   (a) gathering information about the way an opponent plays.
   (b) gathering information from the external environment.
   (c) evaluating a skill and noting how to improve performance.
   (d) organising information which has been pick up by the senses.

9. Parabolic trajectory is most advantageous in which of the following events/sports?
   (a) a softball pitch
   (b) a basketball free throw shot
   (c) a discus throw
   (d) a tennis serve

1. What is the cause of fatigue of the dominant energy system at 40 seconds running time?
   a) Dehydration
   b) Increased lactic acid
   c) Depletion of glycogen
   d) Depletion of Phosphocreatine (PC) stores
12. The body’s reaction to exercise is a carefully coordinated response of various systems, (heart, blood vessels, lungs and nervous system) designed to meet the needs of working muscles.

a. Briefly describe **four** acute (short term) responses of the cardio respiratory system.

b. These systems can be improved by training and, in doing so, improve athletic performance. Explain **three** chronic (long term) effects on the athlete’s cardiorespiratory and / or muscular system of playing competitive basketball three times per week.

15. Refer to the graph below

![Acceleration in 100m Sprint](image)

Explain the way that Usain Bolt accelerates during the 100m sprint. Your answer should include an explanation of positive, negative and uniform acceleration.

**Question 4**

(9 marks)

a) David, a professional javelin thrower wants to increase the length of his throw. Use your knowledge of projectile motion to explain how this can be achieved.

b) David needs to throw a personal best distance with his final throw to win the national championship. He knows that his level arousal will affect how well he performs in his final throw. In the space below, draw a diagram that shows the relationship between arousal and performance. You need to label your diagram and indicate the optimal arousal point for David.

**Question 1 Part a**

(9 marks)

10 years ago, Julie was about to have her first ever golf lesson in which her coach is going to attempt to teach her how to hit a drive. Today, Julie is a professional golfer competing on the International Women’s Tour. Using the ‘Fitts and Posner’ model of learning motor skills, explain the phases Julie progressed through on her journey from a beginner to a professional golfer. For each phase give the following information

- The name of the phase
- A description of the phase
- The characteristics of Julies performance
- The focus of her coach
The graph below illustrates the relative contribution of the three energy systems to exercise of varying duration.

![Graph showing energy contribution over time](image)

**a)** Label the three Energy systems on the graph.  

**b)** When playing a game of Touch Football, energy is consistently produced from the three energy systems. Using the above graph explain this statement.  

**c)** What is the lactate threshold and can work be sustained above the threshold level for extended periods of time?  

**d)** Is fat a more or less efficient fuel source than carbohydrate during aerobic exercise? Explain your answer.  

**e)** Endurance athletes often refer to a stage as “Hitting the Wall”. What physiological changes are occurring when athletes experience this.