

**IM SYLLABUS (2021)**

**PHYSICAL EDUCATION**

**IM 36**

**SYLLABUS**

**Physical Education IM 36**

(Available in September)

**Syllabus**

1 Paper (2 hrs 30 mins)

**Introduction**

This syllabus provides candidates with an opportunity to study both the theoretical and practical aspects of physical education and sport, enabling candidates to know about, understand and analyse the major concepts and principles underlying sport and physical education.

**Aims**

The aims of an intermediate course based on this syllabus, are

- To ensure that the candidate has acquired technical and tactical knowledge of a selection of sports, and the rules related to those games.
- To develop an understanding of human performance based on the study of the function and structure of the body.
- To develop an understanding of the physiological, socio-cultural and psychological factors which influence physical activity and sport.
- To foster an ability to relate theory and practice, through analysing concrete experiences.
- To acquire knowledge of the structure, roles and responsibilities of international and local organisations running sport.
- To provide an experience which is valuable both as a means of personal development and as a foundation for employment or more advanced study.
- To ensure that the candidate has achieved a required level of fitness.

**Scheme of Assessment**

Prerequisites: None

The examination will consist of one exam paper (80%) and a practical component (20%). The theory will be assessed by means of a written examination paper of 2 ½ hours. The practical component will be assessed by means of a practical examination (30 minutes).

Module 1 is assessed by means of a video analysis that is part of the written paper (Section A). Modules 2, 3 and 4 are assessed on the basis of a written examination paper (Sections B, C and D). Module 5 is assessed through a practical examination.

**Section A (Techniques, Tactics and Rules in Team Games):** the Examination Panel will issue 5 questions including at least one from each area of techniques, tactics and rules. Candidates are to answer all questions.

**Section B (Anatomy and Physiology):** Candidates are to answer all questions.

**Section C (Acquiring Movement Skills):** Candidates are to answer all questions.

Section D (Socio-cultural Studies and the Role; Structure of International and Local Sport Organisations): Candidates are to answer 2 from 3 questions.

### Weightings for final Grade

|                       |           | Module  | % Weighting |
|-----------------------|-----------|---|-------------|
| Examination Paper     | Section A | Techniques, tactics and Rules in Team Games   | 10          |
|                       | Section B | Anatomy and Physiology  | 35          |
|                       | Section C | Acquiring Movement Skills   | 20          |
|                       | Section D | Socio-cultural Studies: The Role and Structure of International and Local Sport Organisations | 15          |
|                       |           |   | 80%         |
| Practical Examination | Practical | Fitness tests   | 20%         |
|                       |           |   | 100%        |

### Grading

The final grade will be based on an overall aggregate score in written paper and fitness tests. Candidates can qualify for grades A-C only if they obtain a pass in the practical examination.

### Content

The syllabus consists of five modules:

- Module 1      Techniques, tactics and Rules in Team Games
- Module 2      Anatomy and Physiology
- Module 3      Acquiring Movement Skills
- Module 4      Socio-cultural Studies and the Role and the Structure of International and Local Sport Organisations
- Module 5      Fitness tests

**Module 1 Techniques, Tactics and Rules in Team Games (assessed through video analysis)**

TWO of the following eight sports will be chosen for every sitting. MATSEC Support Unit will publish on the website the subjects examined at least two years before the examination session.

- i) Badminton
- ii) Basketball
- iii) Football
- iv) Handball
- v) Hockey
- vi) Rugby Union
- vii) Tennis
- viii) Volleyball

**Module 2 Anatomy and Physiology**

**1. An analysis of human movement**

- i) The skeleton
- ii) Joints and articulations
- iii) The muscular system (without distinction between structural and functional characteristics of muscle fibres; definition of fixators and neutralisers and example at the shoulder)
- iv) Putting it all together (excluding second layer muscles)
- v) The effects of a warm up and cool down on skeletal muscle tissue
- vi) The impact of different types of physical activity on the skeletal and muscular tissues
- vii) Basic mechanics of sport and exercise

**2 The cardiovascular system – the maintenance of blood supply**

- i) The structure and function of the heart
- ii) The conduction system - how the heart works
- iii) The cardiac cycle
- iv) The control and regulation of the heart
- v) Cardiac dynamics – the relationship between heart rate, stroke volume and cardiac output (excluding ejection fraction)
- vi) Cardiac dynamics during exercise (general understanding excluding specific figures)
- vii) The vascular system
- viii) Blood pressure (general understanding excluding specific figures)
- ix) The distribution of cardiac output at rest and during exercise (excluding vasomotor tone)
- x) The transport of oxygen
- xi) The transport of carbon dioxide
- xii) The physiological effects of a warm-up and a cool-down on the cardiovascular system
- xiii) Health-related considerations – the role of exercise in maintaining a healthy and active lifestyle

- 3 The respiratory system – the maintenance of oxygen supply**
- i) External respiration
  - ii) The mechanics of breathing
  - iii) Respiratory regulation – the respiratory control centre
  - iv) Pulmonary diffusion – gaseous exchange at the lungs
  - v) The effect of altitude on the respiratory system
  - vi) The transport of oxygen and the oxyhaemoglobin dissociation curve (specific to the four factors causing the Bohr shift)
  - vii) Gas exchange at the muscle and tissues (excluding arterial-venous oxygen difference)
  - viii) Minute ventilation
  - ix) Ventilation during exercise
  - x) Respiratory complications
  - xi) The impact of smoking on the respiratory system
  - xii) The adaptive responses of the respiratory system to training

### **Module 3 Acquiring Movement Skills**

Questions will relate to various games.

- 4 Classification of motor skills and abilities**
- i) Basic understanding of the nature of skilled performance
  - ii) Classification of skills
  - iii) Application of classification to the organisation of practice
  - iv) Classification of abilities relating to movement skills
- 5 Development of motor skills and use of different practice methods**
- i) Basic understanding of learning and performance
  - ii) Stages of motor skill learning (excluding considerations in motor learning)
  - iii) Types of guidance
  - iv) Types, structure and presentation of practice
- 6 Information processing during the performance of skills**
- i) Information-processing models (Whiting's Model)
  - ii) Memory (excluding Tulving)
  - iii) Response time
  - iv) Feedback
- 7 Motor control of skills and its impact upon developing effectiveness in physical activity**
- i) Motor programmes and control of movement
  - ii) Schema theory
- 8 Learning skills in physical activity**
- i) Motivation
  - ii) Arousal (excluding RAS)
  - iii) Theories of learning
  - iv) Socialisation
  - v) Social learning and observational learning
  - vi) Transfer of learning

## **Module 4 Socio-cultural Studies: The Role and Structure of International and Local Sport Organisations**

### **9 The concept of physical activity**

- i) What is meant by 'physical activity'
- ii) Recreation, physical recreation, active leisure
- iii) Outdoor and adventurous activities
- iv) What is sport?

### **10 International Sport**

International Olympic Committee

- i) Basic introduction to the Olympic Charter (composition, mission and role of IOC, NOCs and IFs)
- ii) Olympic Solidarity and its support to NOC's and IF's
- iii) Olympic Education and values in sports

### **11 Sports in Malta**

SportMalta

- i) The role of the SportMalta
- ii) Existing programmes promoting sports in Malta

Maltese Olympic Committee

- iii) History of the Maltese Olympic Committee since 1928
- iv) Its role for the support of Elite Sport

National Governing Sports Associations

- v) Aquatic sports association – History and its development
- vi) Malta Football Association – History and its influence on Maltese Sports

## **Module 5 Practical Performance in Fitness (assessed through a practical examination)**

Fitness tests (**5 marks each**)

- 1) Sit-and Reach
- 2) 30 seconds sit-ups
- 3) 35m sprint
- 4) 1500m

### **Sit and Reach Test**

Source: <http://www.sport-fitness-advisor.com/flexibilitytests.html> & <http://www.peworld.org>

The sit and reach test measures the flexibility of the lower back and hamstring muscles.

### **Equipment**

- 1) The sit and reach test requires a box, about 30cm high.
- 2) A marking slider (ruler)

## Test Procedure

The candidate's flexibility is assessed using the following test criteria.

*The candidate should:*

- 1) Sit on the floor with straight legs, knees flat against the floor, held by the examiner, and soles flat against the box (no shoes), with a ruler on top.
- 2) Reach forwards with arms and fingers outstretched, and tries to stretch past the toes.
- 3) Slide the ruler as far as possible keeping the fingertips level with each other and legs flat. (No jerk or bounce movements to reach further allowed).
- 4) Remain in position for three seconds. The length of the stretch is measured in cm at the fingertips. Past the toe line is a positive reading. Not reaching the toe line is a minus reading.

## Scoring

| Points/ Mark | Males (cm) | Females (cm) |
|--------------|------------|--------------|
| 10           | >17        | > 21         |
| 8            | 6 to 16    | 11 to 20     |
| 6            | 0 to 5     | 1 to 10      |
| 4            | -8 to -1   | -7 to 0      |
| 2            | -15 to -9  | -12 to -8    |

Adapted from: <http://www.fitnessvenues.com/uk/fitness-testing-sit-and-reach-test>

## '30 second' Sit-up Test

Source: <http://www.brianmac.co.uk/situptst.htm>

The sit and reach test measures the abdominal muscles' strength and endurance.

## Equipment

1. Flat, clean, cushioned surface.
2. Stopwatch.

## Test Procedure

The aim of this test is to perform as many sit-ups as you can in 30 seconds. Lie on the mat with the knees bent at right angles, with the feet flat on the floor and held down by the examiner/assistant. The fingers are to touch the side of the head throughout the test. On the command 'START', examiner starts stopwatch while you raise the chest until you are able to touch your knees with your elbows. You then lower your trunk until the shoulder blades touch the floor. Continue for 30 seconds.

## Scoring

| Points/ Mark | Males    | Females  |
|--------------|----------|----------|
| 10           | > 30     | > 25     |
| 8            | 26 to 29 | 21 to 24 |
| 6            | 20 to 25 | 15 to 20 |
| 4            | 17 to 19 | 11 to 14 |
| 2            | 14 to 16 | 7 to 10  |

Adapted from Davis, 2000

### 35m Sprint Test

Source: <http://www.topendsports.com/testing/tests/sprint-60meters.htm>

The purpose of this test is to determine acceleration and speed.

#### Equipment

1. Measuring tape/marked running track, cones/markers
2. Stopwatch or time-gates.

#### Test Procedure

The candidate's acceleration and speed are assessed using the following test criteria.

- 1) The candidate runs a single maximum sprint over 35 metres, with the time recorded.
- 2) The candidate should have an acceleration zone of a minimum of 3m
- 3) Two trials are allowed, and the best time is recorded to the nearest two decimal places.

#### Scoring for 35m sprint

| Points/ Mark | Rating    | Males (sec) | Females (sec) |
|--------------|-----------|-------------|---------------|
| 10           | Excellent | < 4.80      | < 5.30        |
| 8            | Good      | 4.80 - 5.09 | 5.30 - 5.59   |
| 6            | Average   | 5.10 - 5.29 | 5.60 - 5.89   |
| 4            | Fair      | 5.30 - 5.60 | 5.90 - 6.20   |
| 2            | Poor      | 5.61 – 5.99 | 6.21 – 6.50   |

Source: <http://www.topendsports.com/testing/tests/sprint-60meters.htm>

### 1500m run test

Source: <http://www.topendsports.com/testing/tests/1mile-run.htm>

This test measures aerobic fitness and leg muscles endurance.

#### Equipment

1. 1500m flat running track
2. Stopwatch.

#### Test Procedure

In order to assess the candidate's aerobic fitness and leg muscles endurance the examiner needs to check the following test criteria.

- 1) The candidate is to complete 1500 m course in the shortest possible time.
- 2) The candidate should start by lining up behind the starting line. On the "go" command, the clock will start, and the candidates begin running at their own pace.
- 3) The total time to complete the course is recorded for each candidate, in minutes and seconds. A score of 99minutes and 99seconds indicates that the candidate could not finish the distance.

**Scoring**

| Points/ Mark | Rating    | Males (sec)  | Females (sec) |
|--------------|-----------|--------------|---------------|
| 10           | Excellent | < 6:30       | < 7:30        |
| 8            | Good      | 6:31 – 7:30  | 7:31 – 8:30   |
| 6            | Average   | 7:31 – 8:30  | 8:31 – 9:30   |
| 4            | Fair      | 8:31 – 9:30  | 9:31 – 10:30  |
| 2            | Poor      | 9:31 – 10:30 | 10:31 – 11:30 |

Source: Hungarian Tables

**Reading List**

Books

Carnell, C., Ireland, J., Mackreth, K., Miller, C., & van Wely, S.  
(2008). *OCR AS PE Revision Guide*. Essex, Heinemann.

Thompson, G., Wiggins-James, N. & James, R.  
(2008). *OCR PE for AS*. London, Hodder Education.

Internet sites

[www.olympic.org](http://www.olympic.org)

- 1) Olympic Charter
  - Chapter 1: Composition and general organisation of the Olympic Movement; Mission and Role of the IOC, symbols of the Olympic Movement.
  - Chapter 3: Mission and role of IF's within the Olympic Movement
  - Chapter 4: Mission and role of NOC's
- 2) Olympic Solidarity
  - Introductory page in Mission statement
- 3) Olympic Education and Values in Sport
  - Teaching Values Tool Kit: Section 1: Fundamental principles of the Olympic Movement; The educational values of Olympism.

[www.sportmalta.org.mt](http://www.sportmalta.org.mt)

- a. The History and concept of KMS (opening page)
- b. KMS programmes (opening page)

[www.nocmalta.org](http://www.nocmalta.org)

- 1) History of the Maltese Olympic Committee (opening page)
- 2) Objectives (opening page)
- 3) Athletes programmes (opening page)

[www.asaofmalta.org](http://www.asaofmalta.org)

- 1) About ASA (opening page)
- 2) About Swimming (opening page)
- 3) History of Waterpolo (opening page)

[www.mfa.com.mt](http://www.mfa.com.mt)

- 1) History of the Malta Football Association