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| **EQF Level 4 Pilates Teacher**  **Core Knowledge & Skills Requirements**  **Mapping Toolkit** |

In this mapping toolkit you will find all the core knowledge and skills requirements which you will need to part-map your Assessed Pilates training programme in order for it to be endorsed for recognition by REPs Ireland.

**Overview**

* Psycho-social Aspects of Participation in Pilates sessions
* History, Principles and Practice of Pilates
* Functional Anatomy and Physiology
* Client Enrolment & Assessment
* Programming, Delivery and the Client Relationship

**Core Knowledge & Skills Requirements**

1. **Psycho-social aspects of Participation in Pilates Sessions**
   1. Psychological Considerations
   2. Social Considerations
2. **History, Principles and Practice of Pilates**
   1. History and Development
   2. Pilates Principles
   3. Pilates Practice
3. **Functional Anatomy & Physiology**
   1. Functional Kinesiology/Biomechanics
   2. Muscles
   3. Cardiorespiratory System
   4. Nervous and Endocrine System
   5. Nutrition
   6. Adaptations to Exercise
4. **Client Enrolment and Assessment**
5. **Programming, Delivery and the Client Relationship**
   1. Pilates Programme Design
   2. Programme Delivery
   3. The Client Relationship
   4. Record Keeping

*Acknowledgement: EuropeActive*

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**How to use this toolkit**

Using the righthand column, indicate where in your training materials the evaluator can see the relevant criteria evidenced. Use the third column to indicate the assessment method and materials used to assess the criteria, see example below:

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| **Content Summary and Learning Outcomes** | **Where can the evidence be found?** | **Where and how will it be assessed?** |
| **Learners should demonstrate knowledge and understanding of:** | | |
| * 1. **Individual Instruction – Core Knowledge** | | |
| **2.1.1 Designing an Individual Fitness Programme** | | |
| * The structure of an individual fitness programme, to include: Warm-up, Main activity, Cool down |  |  |
| * Designing an individual fitness programme | *Slide 9 of PowerPoint* | *Included in worksheet 2* |
| * The necessary skills of an effective and qualified fitness instructor. | *Slide 10 of PowerPoint* | *Not assessed* |
| **2.1.2 Delivering a Fitness Session** | | |
| * The national legal responsibilities of the fitness instructor |  |  |
| * How to identify status of participants relative to screening information |  |  |
| * How to identify any changes required (alternatives/adaptations), to planned activities |  |  |
| * Health & Safety checks to be made, relevant to the exercise environment | *Page 3 of the manual* | *Included in worksheet 4* |
| * The information needed to respond appropriately to a medical emergency |  |  |
| * How to provide an appropriate plan for the sessions. |  |  |

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| **Content Summary and Learning Outcomes** | **Where can the evidence be found?** | **Where and how will it be assessed?** |
| **Learners should demonstrate knowledge and understanding of:** | | |
| 1. **Psycho-social aspects of Participation in Pilates Sessions** | | |
| **1.1 Psychological Considerations** | | |
| * Effective types of communication and avoid reinforcing negative belief models from the client ("I can't, I never could") and so generate self-efficacy and positive expectations of their Pilates sessions. |  |  |
| * How to take into account factors which may include age, sex, ethnicity, socio-demographic and values, in creating an atmosphere in which clients feel comfortable and confident to exercise. |  |  |
| * Knowledge of appropriate models for behavioural change such as the ‘Prochaska & DiClemente’ models and the characteristics of an individual at each stage and the appropriate interventions/strategies at each stage. |  |  |
| **1.2 Social Considerations** | | |
| * The importance of social interaction in maintaining health and independence |  |  |
| * How to facilitate social interaction through delivery of group exercise programmes |  |  |
| * The value of keeping attendance records and of contacting regular clients who miss a session |  |  |

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| 1. **History, Principles and Practice of Pilates** | | |
| **Learners should demonstrate knowledge and understanding of:** | | |
| **2.1 History and Development** | | |
| Key episodes from the history of Joseph Pilate (1883-1967):   * Childhood/Youth in Germany * Sickly child * Influences included yoga, gymnastics, martial arts, self defence * 1912: UK * 1914: World War I: Interned in camps, including Isle of Man * 1924: Patent granted in Berlin for Reformer * 1926: Travel to the USA, meeting Clara * 1929: Studio Opening in New York * ‘Contrology’ original name of the Method * 1934: wrote ‘Your Health’ * 1945: wrote ‘Return to Life’ * 1967: Death * Contrology’ became known as the Pilates Method after Joseph Pilates’ death   and of the ’First Generation’ Teachers:   * Carola Trier * Eve Gentry * Bob Seed * Ron Fletcher * Romana Kryzanowska * Kathy Grant * Lolita San Miguel * Bruce King * Mary Bowen * Robert Fitzgerald |  |  |
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| **2.2 Pilates Principles** | | |
| Original principles created by Joseph Pilates:   * Concentration * Control * Centring * Flowing Movement * Breathing * Precision |  |  |
| **2.3 Pilates Practice** | | |
| Learners should demonstrate practical and technical competence by being able to pass a practical assessment in which they perform a minimum of 12 exercises, drawn from or modified from, the original 34 exercises. To meet the learning outcomes of this programme students will have to fully demonstrate their achievement against the standards, which could typically involve a minimum of around 150 hours of taught contact time within an overall programme of development of 250-350 hours of student study and practice. |  |  |

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| **3 Functional Anatomy & Physiology** | | |
| **Learners should demonstrate knowledge and understanding of:** | | |
| **3.1 Functional Kinesiology/Biomechanices** | | |
| * The body’s three anatomical axes and planes including the terms Frontal (Coronal), Sagittal and Transverse. |  |  |
| * The classification of joints in the human body (Fibrous, Cartilaginous and Synovial) focusing on their functional significance including examples of each type and sub-types of joint. |  |  |
| * The importance of ensuring that movement at all joints is kept in the correct planes throughout exercise performance for prevention of ligament strain and potential risk of injury (e.g. at shoulder joint, inappropriate biomechanics can place a strain on the rotator cuff muscles increasing risk of osteoligamentous injury). Stability and movement within each type of joint. |  |  |
| * Classification of bones – to include long, short, flat, irregular, sesamoid, relating structure to function. |  |  |
| * Role of osteoblasts and osteoclasts, hormonal contribution in bone density. |  |  |
| * Bone density and its relation to resistance training activities. |  |  |
| * Long- and short-term effects of exercise on bone, to include osteoporosis. |  |  |
| * Articulations and the joint movements possible. To include the following movement terms with examples: flexion, extension, hyper-extension, adduction, abduction, elevation, depression, protraction, retraction, upward and downward rotation, lateral flexion, horizontal flexion and extension, plantar flexion, dorsi-flexion, internal and external rotation, circumduction, pronation, supination, eversion and inversion. |  |  |
| * The main bones and their implications for vital functions and movements. |  |  |
| * The vertebral column: structure and function – role of curves. |  |  |
| * The importance of maintaining the correct degree of spinal curvature at the cervical, lumbar and thoracic vertebra regarding weight-bearing and biomechanical efficiency and for the transmission of stress, caused by impact, through the pelvic girdle, kinetic chain and muscle synergies. |  |  |
| * The potential for sprains and ligamentous damage increased by excessive nonfunctional movement during exercises. |  |  |
| * The main structural and physiological characteristics and functions of the osseous connective tissues to include the periosteum, ligaments (dense regular collagenous/elastic fibres), joint capsule (dense irregular, elastic, collagenous), fasciae. |  |  |
| * The structure of ligaments and their tensile strength related to fibre direction and their sensitivity to shearing forces and tearing. |  |  |
| * Simple biomechanical knowledge of levers. |  |  |
| * Biomechanical implications of different centres of gravity in relation to posture. |  |  |
| * Open and closed chain kinetic movements with examples of each and a consideration of their advantages and disadvantages. |  |  |
| **3.2 Muscles** | | |
| * The three types of muscle in the human body (skeletal, smooth, cardiac). |  |  |
| * The gross anatomy and structure of a skeletal muscle and its connective tissue. |  |  |
| * The connective tissue of muscle merging into tendons composed of regular collagenous filaments. |  |  |
| * The role of proprioceptors of tendons. |  |  |
| * The interaction between the contractile filaments of muscle (actin and myosin). |  |  |
| * The role of a motor unit (i.e the nerve and the muscle fibers which it innervates) in providing an ‘action potential’ to create fine or coarse muscle control. |  |  |
| * The structural features and characteristics of Type 1 (slow twitch) and Type 2A (fast twitch/intermediate) and Type 2B fibres and the implications of exercise intensity on the recruitment sequence of different motor unit types. |  |  |
| * The different types of muscular contractions (concentric, eccentric, isometric, isotonic and isokinetic). |  |  |
| * The major muscles of the body defining their starting points in terms of the bones they originate from (though in most cases NOT the exact anatomical part of the bone), the joints that they cross and the bones that they insert onto (finishing point). |  |  |
| * The joint actions as a result of muscular action. |  |  |
| * A range of actions and activities, the agonists, antagonists, main synergists and fixators. |  |  |
| * The functional role of abdominal muscles in synergy with other muscles on the trunk, rib cage, pelvis and vertebral column. |  |  |
| * Short and long term effects of exercise on muscles including: Increased endurance capacity in muscles developed between by the acquisition of increased numbers of mitochondria, oxidative enzymes and capillaries leading to increased oxidative ability within muscles. |  |  |
| * The role of the muscle spindle cells and the golgi tendon organs. |  |  |
| **3.3 Cardiorespiratory System** | | |
| * The anatomy of the heart to include the names and location of the heart valves, muscular component and flow of blood through the heart. |  |  |
| * The cardiac cycle and the terms stroke volume (amount of blood pumped per beat) and cardiac output (amount of blood pumped per minute = stroke volume x beats per minute). |  |  |
| * The structure, function and characteristics of arteries, arterioles, veins, venules and capillaries. |  |  |
| * The effect of physical activity on cardiovascular system. |  |  |
| * Understanding the effect of medication for the cardiovascular system and their impact on training. |  |  |
| * The respiratory system: description and function. |  |  |
| * The relationship between the cardiovascular system and respiratory system and how regular physical activity impacts them. |  |  |
| * The passage of inhaled air from the atmosphere to cellular level and back. |  |  |
| * Healthy lifestyle choices and their positive effect on cardio-respiratory tissues, e.g. the effects of smoking or alcohol consumption. |  |  |
| * Short and long term effects of exercise on the cardio-respiratory system to include short term – increase in heart rate, increase in breathing rate, effects of building up of CO2 in bloodstream; and long term effects including increase in stroke volume, lower resting heart rate, reduced risk of heart disease, reduction of high blood pressure, improved blood cholesterol, reduction of body fat and increased every day function etc. |  |  |
| * Coronary Heart Disease and risk factors that can manipulate it such as smoking, high blood pressure, high blood cholesterol, physical inactivity, diabetes mellitus, family history, age, stress, obesity. |  |  |
| **3.4 Nervous and Endocrine System** | | |
| * The main responsibilities of the nervous system to include: * Sensory Input – monitoring events in and outside the body * Interpretation – analysing data * Motor Output – response to incoming data |  |  |
| * The two parts of the nervous system – the Central Nervous System (CNS) incorporating the brain and spinal cord and the Peripheral Nervous System (PNS) consisting of all nerves extending from the spinal cord, to include: * The role of the CNS in receiving input from the sense organs and receptors about the state of both the external and internal environment, collating all of the information and sending out messages via the motor neurons of the PNS to effectors (muscles and glands). * The PNS and its divisions into Somatic and Autonomic branches. * The Somatic branch terminating at the neuromuscular junction controlling movement under voluntary control. * The role of the Autonomic Nervous System in controlling cardiac and smooth muscle, the endocrine glands that secrete hormones and other organs, thereby regulating their activity. * The two opposing branches (to include the neurotransmitters and receptors) and their roles e.g. Sympathetic nerves speed up responses (e.g. heart rate) and mobilise energy stores to get us ready for action. Parasympathetic nerves slow things down and are more active during periods of calm and relaxation. |  |  |
| * Regular activity for the nervous system, which enhances hard wire neuromuscular connections and improves all of the features of motor fitness such as reaction times, balance, spatial awareness and coordination etc. |  |  |
| * Description of hormonal response to exercise and their catabolic and anabolic role. |  |  |
| * Link between type of exercise intensity and hormonal reaction for specific goals like weight loss programme, muscle building and wellness programme. |  |  |
| * Role of cortisol and side effects of too high production. |  |  |
| **3.5 Nutrition** | | |
| * The dietary role and common dietary sources for each of the six main nutrients (carbohydrate, fat, protein, vitamins, minerals, water). |  |  |
| * Balance between saturated and unsaturated fatty acid and effects on health. |  |  |
| * The importance of right intake of essential fatty acids (Omega 3 and 6) and their effects on health. |  |  |
| * The role of vitamins and minerals in cells metabolic process. |  |  |
| * The role and desirable levels of total cholesterol, HDLs and LDLs in the body, including the total cholesterol/HDL ratio. |  |  |
| * The role of carbohydrate, fat and protein as fuels for aerobic and anaerobic exercise. |  |  |
| **3.6 Adaptations to Exercise** | | |
| In addition to adaptations mentioned above, learners should demonstrate knowledge and understanding of:   * The effects of health-related physical activities, e.g. improved posture, reduced risk of joint and soft tissue injuries, increased bone density, improved neuromuscular efficiency, and range of motion training |  |  |

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| **4. Client Enrolment and Assessment** | | |
| **Learners should demonstrate knowledge and understanding of:** |  |  |
| * An appropriate pre-participation screening process to identify any considerations, or contraindications to any Pilates exercises (e.g. PAR-Q and interview). |  |  |
| * When and how to refer a client, potential or existing, to a medical professional to gain consent for exercise, both on an initial and, where necessary, ongoing basis. |  |  |
| * Static and dynamic postural evaluation. |  |  |
| * How to agree and set appropriate short and medium term goals with the client. |  |  |
| * The need for goals to be measurable, achievable and realistic. |  |  |
| * The importance of gaining the client’s agreement to these goals, and of the client agreeing to work within their own physical limits, ensuring that they will inform the teacher of any changes that have occurred that may impact on these or on their ability to exercise. |  |  |
| * Best practice and legal requirements, if any, governing the storage of confidential information. |  |  |
| * How to adapt class or session delivery to accommodate a client’s limitations and ensure safety. |  |  |

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| **5 Programming, Delivery and the Client Relationship** | | |
| **Learners should demonstrate knowledge and understanding of:** | | |
| **5.1 Pilates Programme Design** | | |
| * Incorporating Pilates principles. |  |  |
| * Including three appropriate phases of class: preparation/main/closing. |  |  |
| * Including all planes of movement. |  |  |
| * The principles of training, including specificity, reversibility, adaptability, individuality and recovery time. |  |  |
| * How to use gravity and lever length to modify exercises according to the ability of the client(s). |  |  |
| * How, and when, to adapt a programme, and/or exercises within the programme, according to the needs of the individual or group |  |  |
| * Being able to plan a programme taking into account appropriate short and medium term goals and with appropriate time frames, either agreed with the client or according to the common goals of a group. |  |  |
| * Reviewing and adapting goals according to changes in a client’s needs. |  |  |
| * Recognise the needs of special populations and being able to adapt as necessary, or refer on to a properly qualified professional. |  |  |
| * Working within the constraints of both the client(s) and teacher’s ability, and ensure safety at all times |  |  |
| * The ability to adapt a Pilates programme through: * Choice of exercises * Sequence of exercises * Number of repetitions * Variation of pace and rhythm * Type of muscle contraction * Duration and frequency of sessions * Rest and regeneration between classes and sessions. |  |  |
| * Current ACSM (or other recognised international) guidelines for developing the different components of fitness. |  |  |
| * The importance of adequate rest phases between training loads and the signs and symptoms of overtraining. |  |  |
| * The principles of Frequency Intensity Time Type for health- and skill-related components of fitness. |  |  |
| **5.2 Programme Design** | | |
| * How to use language and terminology that is easily understood by the client. |  |  |
| * Providing clear instruction and corrective exercise cues to enable the achievement of good technique during execution of exercises. |  |  |
| * Ensuring that the client is comfortable with hands on correction. |  |  |
| * The appropriate balance between stability and mobility. |  |  |
| * Recognising correct exercise technique, to include appropriate positioning and general safety considerations. |  |  |
| * Using visual and verbal assessment of client performance. |  |  |
| * Using different teaching strategies to enhance individual/group performance. |  |  |
| * The difference in techniques between teaching a group or an individual. |  |  |
| * Adapting teaching methods to communicate effectively, taking into consideration clients’ learning needs i.e. visual, intellectual, kinaesthetic, imagery or other learning styles. |  |  |
| * Adapting exercise session and timing to ensure the session is safe, appropriate and effective. |  |  |
| * The signs and symptoms of excessive effort that would indicate a need to change the intensity. |  |  |
| * Incorporating supervised, and appropriate unsupervised, exercise into a programme i.e. homework activities, and how to build these into a timetable. |  |  |
| * The different types of environment within which sessions may take place, and how to make the best use of these, i.e. home, gym, studio. |  |  |
| * Considering specific health and safety issues about delivering classes or sessions in an environment not specifically designed for physical activity training. |  |  |
| * The signs indicating that a client should stop exercising immediately or requires medical attention |  |  |
| * Being able to manage an emergency situation when teaching a client or group. |  |  |
| **5.3 The Client Relationship** | | |
| * The need to allow the client the opportunity to give feedback at the end of the class or session. |  |  |
| * The importance of maintaining frequent contact with the client, including between sessions when needed. |  |  |
| * The importance of keeping an appropriate professional relationship between teacher and client. |  |  |
| **5.4 Record Keeping** | | |
| * The importance of keeping appropriate records of exercises taught in a class or session. |  |  |
| * The benefit of keeping records as a way of reviewing a client’s progress. |  |  |
| * The importance of having accurate records in the event of any claim for damages by a client. |  |  |