

Saudi Fitness Standards Technical Expert Group (TEG)

Skills and Underpinning Knowledge for

Personal Trainer

(Saudi Arabia Level 4
referenced to EuropeActive L4 EQF4)

as part of the Saudi Fitness Instructor
Learning Outcomes Framework



General Sports Authority
الهيئة العامة للرياضة



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Personal Trainer

This document supports the Saudi Competence Framework and contains the essential Skills and Knowledge written as Learning Outcomes, based on job purposes, required to work as a Fitness Personal Trainer in the Health and Fitness Industry in Saudi Arabia mapped to EuropeActive (EQF-4), where Saudi Fitness Instructor Level 3 (EQF-3) knowledge is a pre-requisite.

These Standards and the Education associated are purpose and outcome driven, aligned with Arabian Standards Occupational Classification (ASOC) and with Vision 2030's aim to promote the creation of diversified employment opportunities for Saudi nationals.

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Notes:

- Health and safety issues are integrated in other units.
- It is assumed that the Saudi Personal Trainer (Level 4 EQF,) will have acquired all knowledge required to work as a Fitness Instructor as identified in the Saudi Fitness Instructor Guide (Level 3 EQF, Fitness Instructor). Personal trainer must Be CPR certified.

SECTION 1: INTRODUCTORY INFORMATION

Health and sport are of increasing relevance in Saudi society. As in other countries, sport is an important element of economic, social and health-related factors. The aim of fitness occupational standards is to support Saudi Vision 2030 themes: “*Vibrant Society with Fulfilling Lives*” and “*Thriving Economy with rewarding Opportunities*”.

Living healthy, being healthy

A healthy and balanced lifestyle is an essential mainstay of a high quality of life. Yet opportunities for the regular practice of sports have often been limited. This will change. We intend to encourage widespread and regular participation in sports and athletic activities, working in partnership with the private sector to establish additional dedicated facilities and programs. This will enable citizens and residents to engage in a wide variety of sports and leisure pursuits. We aspire to excel in sport and be among the leaders in selected sports regionally and globally.

Furthermore, Vision 2030 sets a clear target to increase sports participation:

- To increase the ratio of individuals exercising at least once a week from 13% of population to 40%

This objective represents a clear opportunity for the Health and Fitness Industry, however it also creates the responsibility to develop sufficient qualified exercise professionals that can service this new flow of participants in physical activity.

Thriving Economy Rewarding Opportunities

The skills and competencies of our children are one of the most important and cherished assets. To make the most of their potential, we will build a culture that rewards determination, provides opportunities for all and helps everyone acquire the necessary skills to achieve their personal goals. To this end, we will reinforce the ability of our economy to generate diverse job opportunities and institute a new paradigm in attracting global talents and qualifications.

On the economic aspects, three goals under the “*Thriving Economy*” theme are related to the potential contribution of a growing sports economy:

- To lower the rate of unemployment from 11.6% to 7%,
- To increase SME contribution to GDP from 20% to 35%
- To increase women’s participation in the workforce from 22% to 30%

It is also relevant, the following areas of work under the same theme, where health and fitness can be a catalyst for change:

Learning for Working

We will continue investing in education and training so that our young men and women are equipped for the jobs of the future. We want Saudi children, wherever they live, to enjoy higher quality, multi-faceted education.

Boosting our Small Businesses and Productive Families

Small and medium-sized enterprises (SMEs) are among the most important agents of economic growth; they create jobs, support innovation and boost exports. SMEs in the Kingdom are not yet major contributors to our GDP, especially when compared to advanced economies. Therefore, we will strive to create suitable job opportunities for our citizens by supporting SME entrepreneurship, privatization and investments in new industries.

Providing Equal Opportunities

Our economy will provide opportunities for everyone – men and women, young and old – so they may contribute to the best of their abilities. We will place a renewed emphasis on lifelong training and we will seek to make the most of the potential of our workforce by encouraging a culture of high performance. One of our most significant assets is our lively and vibrant youth. We will guarantee their skills are developed and properly deployed.

SECTION 2: SAUDI OCUPATIONAL STANDARDS FRAMEWORK

Saudi Occupational Standards and the EQF, what are its benefits?

The Saudi Fitness Occupational Standards are referenced to EuropeActive’s Standards which follow the level system defined by the European Qualifications Framework (EQF).

EQF is a common European reference system which will link different countries’ national qualifications systems and frameworks together. In practice, it will function as a translation device making qualifications more readable. This will help learners and workers wishing to move between countries or change jobs or move between educational institutions at home.

Why does the EQF use learning outcomes?

The EQF uses 8 reference levels based on learning outcomes (defined in terms of knowledge, skills and competences). The EQF shifts the focus from input (lengths of a learning experience, type of institution) to what a person holding a particular qualification actually knows and is able to do. Shifting the focus to learning outcomes:

- Supports a better match between the needs of the labour market (for knowledge, skills and competences) and education and training provision
- Facilitates the validation of non-formal and informal learning
- Facilitates the transfer and use of qualifications across different countries and education and training systems.

It also recognizes that Europe’s education systems, and by extension othe international systems are so diverse that comparisons based on inputs, say length of study, are impracticable.

What does level 4 means at EQF?

EQF Level	Knowledge is described as theoretical and/or factual.	Skills are described as cognitive (involving the use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments).	Competence is described in terms of responsibility and autonomy.
The learning outcomes relevant to Level 4 are	Factual and theoretical knowledge in broad contexts within a field of work or study	A range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study	Exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change. Supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities.

What does level 4 mean at Fitness QF?

EQF Level	Occupation	EUROPEACTIVE Standards	Target Audience
Level 4	Personal Trainer	EUROPEACTIVE Level 4	General Population

SECTION 3: Saudi Personal Trainer – Mapped to EuropeActive (EQF Level 4)

Skills and Underpinning Knowledge for Personal Trainers part of the Saudi Instructor Learning Outcomes Framework

Occupational Title:

Personal Trainer

Occupational purpose: Coach clients individually according to their fitness needs, through an agreed exercise/ physical activity plan and assist with behavioural change.

Occupational Description

A personal trainer's role includes designing, implementing and evaluating exercise/physical activity programs for a range of individual clients by collecting and analyzing client information to ensure the effectiveness of personal exercise programs. A personal trainer should also actively encourage potential clients/members to participate in and adhere to regular exercise/physical activity programs, employing appropriate motivational strategies to achieve this.

Occupational Roles

The personal trainer should be able to:

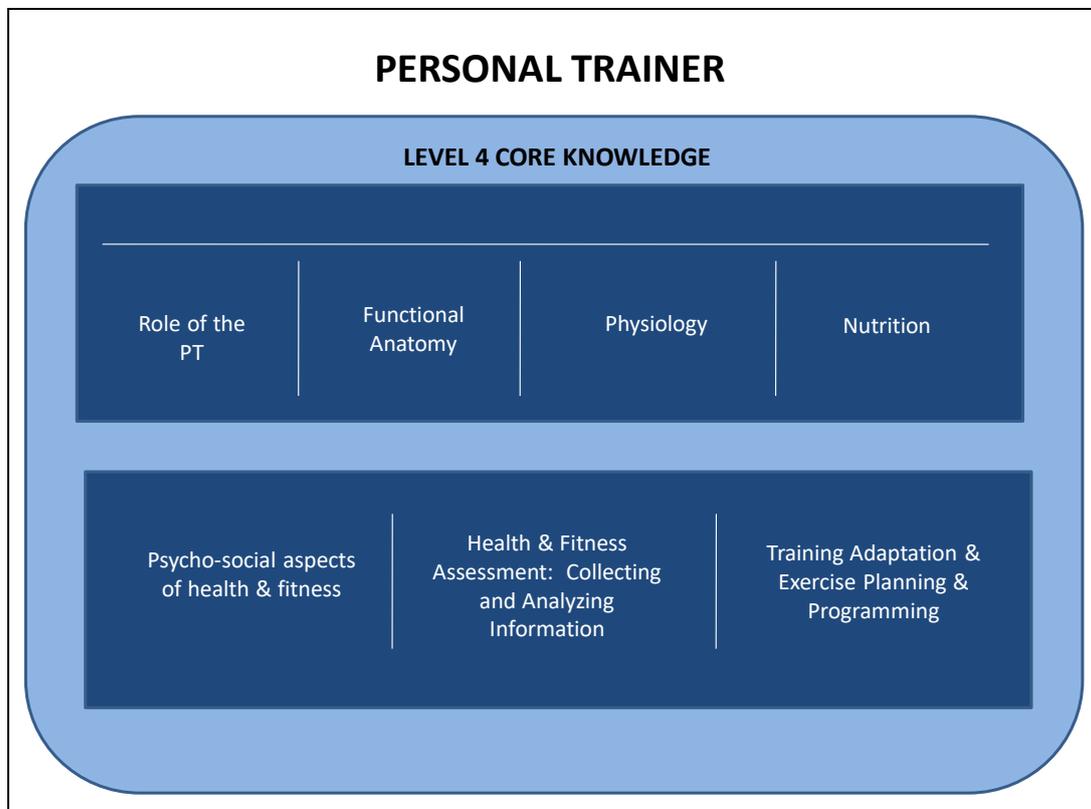
1. Collect information relating to individual clients
2. Carry out fitness assessments to establish client fitness and skill level
3. Analyse information relating to individual clients
4. Identify, agree and review short, medium and long term goals to ensure the effectiveness of exercise programs
5. Provide a range of exercise programs in accordance with the needs of the clients by applying principles of exercise programming
6. Make best use of the environment in which clients are exercising
7. Provide clients with accurate information on the principles of nutrition and weight management
8. Develop and applying strategies to motivate clients to join and adhere to an exercise program
9. Deliver good customer service and be a positive role model at all times and keep up to date with industry developments
10. Promote healthy activities and related strategies for daily living to clients/members
11. Make the appropriate decisions relating to clients and their programs/goals and, where required, refer the client to a more appropriate professional
12. Work within the parameters given at EQF Level 4, recognizing the standards and professional limitations that this provides, referring to appropriate members of staff for guidance and support.

What Personal Trainers Should NOT Do:

While personal trainers often assume multiple roles with their clients — which sometimes includes being a coach, cheerleader or confidant, there are some responsibilities that personal trainers should avoid.

- DO NOT Give medical advice, physical therapy advice or attempt to make a medical diagnosis.
- DO NOT Provide body massage to clients, or any similar service that can be construed as inappropriate touch.
- DO NOT Serve as a psychological counselor to clients or become intimately involved in personal client relationships.
- DO NOT Push your own preferences for fitness goals on clients who do not seek out those same goals
- DO NOT Allow your credentials, liability insurance and other trainer business standards/practices to laps

Level 4 Personal Trainer Knowledge Areas



Section 1: the Role of the PT

Section Overview

- Knowledge and understanding of the basic roles of the Exercise professional as a Personal Trainer.
- Knowledge and understanding of the principles that underpin personal training and how personal training differs from other types of physical activity/exercise instruction.

Section Headings

1.1. Professionalism, Code of Practice/Ethics/National Standards and Guidelines

Learners should demonstrate knowledge and understanding of:

- The ethical requirements that are intrinsic to the Personal Trainer role as stated in the Saudi Arabian Fitness Standards and EREPS code of ethical and professional practice (for more information take level 3 or visit www.ereps.eu)

1.2. Presentation

Learners should demonstrate knowledge and understanding of:

- Basic procedures to introduce him/herself to new clients.
- General rules for customer care
- The basic principles of customer care to include perceived benefits
- The methods and practices, which contribute to effective customer care
- The skills of effective customer care: *Communication, Body language, Negotiation*

1.3. Communication

Learners should demonstrate knowledge and understanding of:

- The personal communication skills necessary to develop rapport in order to motivate individuals to begin exercise, adhere to exercise and return to exercise early.
- Building rapport:
 - The importance of connecting people : body language: posture – eye contact, facial expression, vocal tonality (tempo, intensity, voice inflection)
 - Primacy effects: smiling, mimicking...
 - Using sensory communication (visual, auditory, kinesthetic pattern) to improve communication and orientation of the client.
 - The use of open-ended questioning, reflecting answering
- Motivational Interviewing:
 - Developing “importance”, “confidence” and “readiness”
 - Dealing with resistance to change
 - Using open-ended question, reflecting answering, summarizing
 - Technique of decisional balance sheet

- Removing barriers, problem solving and enhancing benefits of practicing physical activity
- Motivational Strategies
 - The most important and effective behavioral strategies to enhance exercise and health behavior change (e.g. reinforcement, goal setting, social support, problem solving, reinforcement strategies, self-monitoring, etc.)
 - Knowing about the different stages of change of the trans-theoretical model (Prochaska and Di Clemente), being able to use basic strategies for different stages.
 - Using the sensory representational system (Visual, auditory, kinesthetic) to optimize an individual's training session
 - Definition and practical examples of extrinsic and intrinsic reinforcement.
 - Relapse prevention: planning, problem solving, identifying and changing negative thinking.
 - Demonstrate good marketing skills and effective communication skills to convince customers to subscribe in private training sessions.
 - Respecting the privacy space and always ask customer for permission before body touching as a part of the training sessions.

1.4. Health Promotion

Learners should demonstrate knowledge and understanding of:

- The cardiovascular, muscular and flexibility related benefits of physical activity and the significance of these benefits in reducing risk of disease.
 - Appropriate exercise activity required for health benefits and fitness benefits
 - The barriers and motivators to exercise participation
 - The exercise guidelines for health, well-being and physical fitness.
 - The exercise continuum for different levels of physical activity to include relative benefits.
 - The agencies involved in promoting activity for health in Saudi
 - How to promote a healthy lifestyle
- Nutrition, other opportunities for physical activity in everyday life, smoking*

1.5. Plan and Deliver Personal Training

Learners should demonstrate knowledge and understanding of:

- The principles that underpin personal training and how personal training differs from other types of physical activity instruction
- The difference between planning supervised and unsupervised activities and how to build these into a timetable of sessions
- The types of environment within which personal training may be delivered and how to make best use of these
- Specific health and safety issues about delivering personal training in an environment not designed for physical activity instruction
- How to improvise effective activities with the client according to the resources available
- The importance of maintaining frequent contact with the client, including between sessions
- The proactive role of the Personal trainer regarding the adaptation process in each individual especially at the beginning of the training program.

- The importance of provide a proper dose response relationship according to the level of the individual
- The importance of regular and planned communication strategy regarding the training adaptation process.

1.6. Personal trainer education and other requirements

- **Education and certifications:** An educated personal trainer makes for happy and successful clients. Education is the foundation for a long term career as Personal Trainer. Personal trainer certifications, specialty certifications, and CPR/AED are the places to start.
- **Experience:** For most clubs it's not always expected that you've been a personal trainer in order for employment if your credentials and training meet professional recognized standards. It is expected that you have some personal history in training yourself as a starting point.
- **Enthusiasm:** Whether you're soft spoken or outwardly enthusiastic, wear your passion on your sleeve. Be the example of motivation (even when it's hard) because you represent the lifestyle that your client is looking to achieve. Take care of yourself so that you wake up renewed and purposeful each day. Joy and enthusiasm go a long way, so does a happy smile.
- **Appearance:** You don't have to be a supermodel or a superathlete to be a personal trainer. But you DO have to "walk the talk". Being put together and looking like you care about yourself is something that people notice.
- **Growth:** Personal trainer growth comes in the form of continuing education. Continuing education is required of the baseline certification, but more than that it is an opportunity for growth. Take advantage of opportunities around you and absorb wisdom from successful fitness professionals you meet. Continuing your education will keep you always fresh and inspired.

Section 2: Functional Anatomy

2.1. Functional Kinesiology/Biomechanics

Learners should demonstrate knowledge and understanding of:

- The body's 3 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 osteoligamentus 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 & 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, 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
- Abnormal degrees of curvature in the spine (lordosis, kyphosis and scoliosis) and their importance to exercise safety and the design of appropriate activities
- The high risk of shoulder joint displacement and increased scapular stabilising role of the surrounding synergistic musculature and ligaments
- The potential for sprains and ligamentous damage increased by excessive non-functional movement during activities, such as running
- 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 fiber direction and their sensitivity to shearing forces and tearing
- Biomechanical principles of movement - to include 1st, 2nd and 3rd class levers with examples. (e.g. calf raises for 2nd class lever and flexion of the elbow for 3rd class lever)
- Biomechanical implications of different centres of gravity in relation to posture and patterns of adiposity
- Open and closed chain kinetic movements with examples of each and a consideration of their advantages and disadvantages.

2.2. Muscles

Learners should demonstrate knowledge and understanding of:

- The 3 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
- Muscle shape and fiber arrangement including directional forces and line of pull (uni-pennate, bi-pennate, multi-pennate)
- The role of proprioceptors of tendons.
- The interaction between the contractile filaments of muscle (actine and myosine)
- 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 course muscle control

- The structural features and characteristics of Type 1 (slow twitch) and Type 2A (fast twitch/intermediate) and Type 2B fibers 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 effect of each type of muscular contraction on training adaptations and the way muscles can be influenced by different training modalities (e.g. body position in relation to gravity, aqua workouts and partner work)
- The likely relationship between delayed onset of muscular soreness (D.O.M.S.) and both eccentric, concentric and isometric muscle work
- 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.
- Role of muscles like gluteus and latissimus dorsi and thoraco-lumbar fasciae
- The importance of correct involvement of the hip flexor muscle, iliopsoas in core stability training
- Role play by hip flexors muscles iliopsoas complex and pelvic floor in core training
- Short and long term effects of exercise on muscles.

Section 3: Physiology

3.1. Energy Systems

Learners should demonstrate knowledge and understanding of:

- The 3 energy systems used for the production of ATP in working muscle - the alactic anaerobic phospho-creatine (PC) system, the anaerobic lactate system and the aerobic system.
- The effect of the type of exercise, intensity, duration, fitness levels, nutritional level on the 3 energy systems.
- The way to use the 3 energy systems in correlation to the goal of the client
- The way to use acute variables during training to create the different energy system.
- The terms aerobic and anaerobic threshold
- Effects of interval training and EPOC effects on the metabolism.
- The ability of the body to burn fat throughout a range of intensities (not just low intensity) e.g. if the aerobic threshold is raised you can utilize fat more effectively at higher intensities
- The relationship between METs and kilo calories and the prediction of calorie expenditure based on body weight, exercise MET level and duration with examples of different activities and their MET values
- The methods of monitoring exercise intensity - to include; RPE - 6 to 20 or 0 to 10 - talk test, heart rate monitoring, (age related and Karvonen) the benefits and limitations of each method
- The use and amounts of energy nutrients at different intensities

3.2. Cardiorespiratory System

Learners should demonstrate knowledge and understanding of:

- 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 to.
- Healthy lifestyle choices and their positive affect on cardio respiratory tissues, e.g. the effects of smoking or alcohol consumption
- Short and long term effects of exercise on the cardiorespiratory system to include short term – increase in heart rate, increase in breathing rate, effects of building up of CO₂ in bloodstream. 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.

3.3. Nervous & Endocrine System

Learners should demonstrate knowledge and understanding of:

- 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 enhanced 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 program, muscle building and wellness program.
- Role of cortisol and side effects of too high production.

Section 4: Nutrition

Learners should demonstrate knowledge and understanding of:

- 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.
- Examples of food items in each of the four basic food groups;
- Examples of food items for vitamins and minerals intake.
- The components of the energy balance (basal metabolic rate, thermic effect of food, physical activity level)
- Methods to estimate calories requirements
- How to develop a healthy, balanced way of eating;
- Healthy eating patterns;
- How dietary intake influences health; how lack of micronutrients (vitamins and minerals) influences health.
- Lifestyle advice, to include use of tobacco, alcohol, caffeine (current government guidelines);
- How some medical conditions (e.g. CHD, diabetes mellitus, obesity, osteoporosis) may be impacted by nutrition (general advice).
- Energy needs for different activities/sports/fitness plans;
- The role of carbohydrate, fat and protein as fuels for aerobic and anaerobic exercise;
- Safe and effective advices about eating pattern for weight (fat) loss/gain; energy balance; appropriate 'weight' loss goals;
- Appropriate referral/advice organisations
- Analysis of current weight-loss fads and popular diets

Section 5: Psycho-social aspects of health & fitness

Learners should demonstrate knowledge and understanding of:

- The different underlying motives for goal setting (internal & external motivation)
- The psychological aspects of health and fitness, which are influential to health and fitness behavior change (e.g. behavior modification, reinforcement, goal setting, social support and peer pressure etc.).
- The application of basic cognitive-behavioral intervention such as shaping, goal setting, motivation, cueing, problem solving, reinforcement strategies, and self-monitoring.
- Motives and barriers, perceived and actual to participation in physical activity (e.g. relapse prevention model, self liberation, social liberation, etc.)
- Appropriate models for change such as the 'Prochaska & DiClemente' models and the characteristics of an individual at each stage and the appropriate interventions/strategies at each stage (e.g. decisional balance, self efficacy, fitness testing, stimulus control, reinforcement management & counter conditioning etc.).
- The selection of an appropriate behavioral goal and the suggested method to evaluate goal achievement for each stage of change.
- Signs and symptoms of stress, the effects of stress on health and strategies for dealing with stress. (please refer to Saudi Standards for Fitness Instructors, level 3)

Section 6: Health & Fitness Assessment: Collecting and Analysing Information

6.1. Components of Fitness

Learners should demonstrate knowledge and understanding of:

- The 3 different somatotypes (endomorph, ectomorph and mesomorph) focusing on the implications of each body type for exercise capacity and ability to alter body shape.
- Anatomical and hormonal differences concerning males and females and their influence on safe, effective and appropriate physical activity.
- The health and skill related components of total fitness and their definitions to include:
 - Health related
 - Muscular strength
 - Muscular endurance
 - Cardio respiratory endurance (heart and lungs)
 - Flexibility
 - Body composition
 - Skill related
 - Balance (static and dynamic)
 - Coordination
 - Reaction time
 - Power
 - Agility

6.2. Collecting and Analysing Information

Learners should demonstrate knowledge and understanding of:

- Appropriate information relevant to the ability to negotiate goals that are Specific, Measurable, Achievable, Realistic, Time bound to plan and carry out safe and effective programs to enable thorough evaluation of planning options
- Correct screening procedures for:
 - Physical; previous and current level of activity and interests. Evaluation of current levels of all components of fitness - muscular strength, muscular endurance, cardio-pulmonary fitness, flexibility and motor skills (balance & coordination)
 - Psychological; motivation to participate, perceived and actual barriers to participation, stage of readiness to participate and stated future goals and aspirations
 - Medical; health history, current health status, particularly in relation to risk factors for heart disease, the identification of medical conditions that would necessitate medical clearance and past and present injuries and disabilities
 - Lifestyle; work patterns, eating patterns, relevant personal circumstances, likes, dislikes and preferences toward physical activity
- The screening process to identify: risk factors for coronary heart disease; factors that limit the ability to participate/achieve goals; those requiring a referral to an appropriate medical professional or other clinician or medically supervised exercise program
- How to adapt basic programs for participants with particular needs including: sedentary, recovering from injury, over-trained, peak performer, sport specific performer, obese.
- Appropriate use of:
 - Medical questionnaires: Physical Activity Readiness Questionnaire (PAR-Q), medical clearance, informed consent, psychological questionnaires, lifestyle questionnaires etc.
 - Other professionals: GP's, Physiotherapists, Neuromuscular therapists, Consultants etc.
 - Fitness assessments: cardio-respiratory fitness, muscular strength, muscular endurance, flexibility, postural analysis, body composition, contraindications and limitation for testing.
 - Postural assessment – to include:
 - Optimal postural alignment
 - Postural deficiencies and postural deviations
 - Factors affecting posture
 - Posture and client health
 - Static and dynamic postural analysis
 - Selection of suitable assessments
 - Factors to assess
 - Limitations of Personal trainer
- Appropriate health and fitness assessments specific to the client needs

Section 7: Training Adaptation & Exercise Planning & Programming

7.1. Training Adaptation:

Learners should demonstrate knowledge and understanding of:

- The principles of adaptation and modification for each component:
- The continuum between muscular strength (predominantly type 2 fibers) and muscular endurance (type 1 fibers) and neuromuscular efficiency
- Muscular strength influenced by use of high resistance and low repetitions so that motor unit recruitment is maximised and contractile limits are reached
- Muscular endurance enhanced by lower resistance loads and higher repetitions resulting in the build-up of lactic acid and inducing inhibition of further muscle contraction
- Increased endurance capacity in muscles developed between exercise sessions by the acquisition of increased numbers of mitochondria, oxidative enzymes and capillaries leading to increased oxidative ability within muscles
- The repetition ranges for strength, power, endurance and muscle hypertrophy
- The range of heart rate training zone models (e.g. aerobic training zone, fitness zone) for developing aerobic and anaerobic capacity
- Interval, fartlek principles and practical application
- The principles of training including specificity, progressive overload, reversibility, adaptability, individuality and recovery time
- The effects of health related physical activities, to include resistance training (e.g. Improved posture, reduced risk of joint & soft tissue injuries, increased bone density, improved neuromuscular efficiency etc), cardiorespiratory training (reduced risk of CHD, improved body composition etc) and range of motion training
- The principles of periodized training programmes in developing components of fitness
- The use of short, medium and long-term goals. (micro, meso and macro-cycles)
- The use of volume vs intensity through the periodization stages
- The various methods of range of motion (flexibility) training, the advantages and disadvantages of each, including static, ballistic, dynamic and proprioceptive neuromuscular techniques (including myotactic) to facilitate increased range of motion
- The role of the muscle spindle cells and the golgi tendon organs in these mechanisms (including myotactic reflexes, Contract Relax, Antagonist, Contract)
- The current ACSM or other recognized International guidelines for developing the different components of fitness, emphasizing the distinction between activity for health and exercise from evidence-based information.
- The importance of adequate rest phases between training loads and the signs and symptoms of overtraining
- The principles Frequency Intensity Time Type for health and skill related components of fitness.

7.2. Exercise Planning & Programming

Learners should demonstrate knowledge and understanding of:

- The principles of overload, specificity, progression and general adaptations and how they relate to exercise programming and a variety of individual wants, goals and needs
- The signs and symptoms of excessive effort that would indicate a change of intensity
- The ability to recognize correct exercise technique to include appropriate positioning, correct settings for CV machines and general safety considerations
- The ability to modify exercises appropriate to a variety of individual needs
- Training variables to include:
 - Choice of exercises
 - Sequence of exercise

- Resistance and Repetitions
- Number of sets
- Rest between sets (recovery)
- Speed of movement
- Type of muscle contraction
- Duration of session
- Rest between sessions
- Volume of training
- Split routines
- The use of the above variables to develop Strength, Endurance, Hypertrophy, Speed, Power
- The advantages and disadvantages of exercising at various intensities for: sedentary (untrained) experienced (trained), high performers (well trained)
- Calculations of repetition maximums (1RM – 10RM).
- Commonly used resistance training systems evidence-based to include:
 - Single set training
 - Circuit resistance training
 - Basic sets
 - Super setting (agonist/antagonist)
 - Super setting 2 exercises for same muscle
 - Pyramid systems
 - Forced repetitions
- Commonly used Cardio Respiratory training systems to include:
 - Interval
 - Fartlek
 - Aerobic
 - Anaerobic
 - Peripheral Heart Flow training
- The suitability of each training system for the client, when fitness levels and goals are considered.
- Safe and effective use of equipment.
- The basic principles of progressive programming.
- The reasons for using periodization.
- The basic principles of periodization to include: the main two variables, volume and intensity.
- Macrocycles (long term), Mesocycle (medium term) Microcycles (short term).
- Teaching strategies to enhance the individual performance.
- Appropriate methods to adjust programmes to meet the changing needs and circumstances of clients.
- Methods of monitoring exercise intensity to include:
 - Maximum heart rate formula
 - Rate of Perceived Exertion (RPE) scales, both 6-20 and 1-10
 - Metabolic equivalents (METs)
 - Kilocalories per hour (Kcal.hr)
 - Visual assessment
 - Verbal assessment (talk test)
- Understand the own limitations and when to refer clients to other relevant professionals, eg.: exercise specialist, medical professional

Section 8: Fitness & Saudi Society:

8.1. Islamic culture & values - influence in exercise and sports practice

- Fasting and implication in exercise programming