

Sfrito Assessment Guideline

Unit 7022

Level 3: Credit 8: Version 3

Exercise Prescription

**Demonstrate knowledge of the principles of safe
physical activity**

Activity instructions: Candidates can be assessed either by:

1. Oral assessment and/ or
2. Written assessment

Note:

- a. Assessor will need to be familiar with FNZ code of ethics 2000, (see attached) and HSE, first, in order to assess this unit.
- b. This assessment is designed for 'off-job' training, for the development of entry-level competencies for fitness industry workers.

Candidates in this assessment must have done, or be currently learning unit 7021, demonstrate exercise techniques.

Purpose statement: People credited with this unit standard are able to: describe standard physiological responses to physical activity; identify purpose, criteria, and methods of verbal and written screening assessments; identify principles underlying contra-indicated exercises and exercise protocols; identify the role of preparation (warm-up) and recovery (cool down), in activity sessions; identify developmental stretching to enhance flexibility; identify clothing, footwear, and equipment requirements for safe activity; and identify environmental hazards to safe exercise and strategies for negating and minimising environmental hazards.

Special notes:

1. The intent of this unit standard is to develop entry level competencies for fitness industry workers. It involves primarily off- job training. It is recommended that this unit is taught concurrently with unit 7021, demonstrate exercise techniques.
2. Competence in this unit standard requires knowledge of the hierarchy of controls outlined in the health and safety in employment act 1992 (HSE): elimination of significant hazards; isolation of significant hazards when elimination is not possible; and minimisation of significant hazards where elimination and isolation are not possible. Company and organisation safety requirements must conform to the HSE.
3. In current use means currently being used in fitness and/or recreation facilities for which membership is available to the general public.
4. Current in relation to the medical status and activity participation of fitness clients applies to conditions that are ongoing for clients to whom the competencies in this unit standard are applied.
5. Medical history and activity history as applied to fitness clients refers to medical status and activity participation extending back over time that may be considered to have an impact on current health and activity, and which may affect the content and intensity levels of exercise prescription.

Element 1: Describe standard physiological responses to physical activity.

Task:

Written documentation, e.g. Multiple choice/ short answer questions/ case studies/ essays etc.
And/ or Oral questioning/ interview.

Performance criteria		Evidence
1.1	<p>Effects of commencing, sustaining and ceasing physical activity are described in terms of acute physiological responses.</p> <p>Range: exercise variables - duration, intensity, volume, type (body position, sustained or intermittent); Physiological responses - cardio-respiratory, vascular responses, cardiovascular responses, blood pressure, body temperature responses, energy production (major energy systems), metabolism, recovery responses.</p>	<p>Candidate is able to describe the acute physiological responses of the body to all phases of an exercise session, i.e. Commencing, sustaining and ceasing exercise.</p> <p>Candidate needs to include all of the variables in the range, e.g.</p> <ul style="list-style-type: none"> • F.I.T.T. issues • Heart rate response curve • Changes in BP, respiration and temperature with exercise • Introduction to energy systems and basic exercise physiology, e.g. Energy production in anaerobic and aerobic exercise; metabolic changes during exercise. • Stages of recovery and changes to metabolism, BP, hr etc. In recovery stages.
1.2	<p>Effects of sustained changes in physical activity levels are described in terms of chronic physiological adaptations.</p> <p>Range: physical activity variables - time period; type of activity (exercise mode), frequency, volume and intensity of activity; Physiological adaptations - cardiovascular, (capacity, structure, blood pressure); pulmonary, muscular, skeletal, metabolic (metabolic rate, thermoregulation), body composition.</p>	<p>Candidate is able to describe the chronic physiological adaptations of the body in response to stated activity variables, i.e. Type of activity, time period, F.I.T.T. variables.</p> <p>description of chronic adaptations should include: (e.g.)</p> <ul style="list-style-type: none"> • CV adaptation – increased LYH; increased capillarization; BP changes; hr changes etc. • Pulmonary adaptation – oxygen uptake changes; ventilatory changes etc. • Muscular adaptation – ST/ FT density according to activity type; strength adaptations; force development etc. • Skeletal adaptation – bone density changes etc. • Metabolic adaptation – mitochondrial density changes; lactate levels etc. • Body composition adaptation – lean muscle mass/ fat-free mass etc.

Element 2: Identify purpose, criteria and methods of verbal and written screening assessments

Task:

Written documentation, e.g. Multiple choice/ short answer questions/ case studies/ essays etc.
And/ or Oral questioning/ interview.

Performance criteria		Evidence
2.1	<p>Personal characteristics significant for exercise prescription are described in relation to exercise capacity.</p> <p>Range: age, gender, body type, health history, activity history, current health status including medication, current activity levels.</p>	<p>Candidate is able to <u>describe</u> the personal characteristics which relate to exercise capacity, in exercise prescription. (range variables must all be covered in answer), e.g.</p> <ul style="list-style-type: none"> • Age: functional capacity (mvo2) decreases with age. • Gender: differences exist between sexes in strength, functional capacity, etc. • Body type: amount of LBM affects exercise capacity etc. • Health status: current health status affects outcome of exercise testing etc.
2.2	<p>Health history factors affecting exercise capacity and safety are described in terms of exercise prescription implications.</p> <p>Range: medical history, injury history, family predisposition's.</p>	<p>Candidate is able to <u>describe</u> how health history characteristics affect exercise capacity and safety in exercise prescription. (range variables must all be covered in answer), e.g.</p> <ul style="list-style-type: none"> • Medical/ health history: e.g. Individuals with asthma may have impaired exercise capacity and exercise type and intensity must be adjusted according to test results. • Injury history: e.g. the presence of injury (either acute or chronic) needs correct diagnosis and appropriate adjustment to the exercise loading/ intensity/ type. • Family predisposition's: e.g. Individuals presenting with family history risk factors, may require medical clearance before commencing exercise.

2.3	<p>Activity history factors affecting exercise capacity and safety are described in terms of exercise prescription implications.</p> <p>1. Range: occupations (level and type of activity, characteristic postures and positions), discretionary physical activity (level and type of sporting and leisure activity, walking and cycling for transport).</p>	<p>Candidate is able to <u>describe</u> the exercise prescription implications of an individual's activity history in relation to exercise capacity and safety: (range variables must all be covered in answer) e.g.</p> <ul style="list-style-type: none"> • Occupation: e.g. Those individuals with labour-intensive occupations may tolerate different exercise loadings/ intensity ranges compared with those who are sedentary. • Discretionary physical activity: e.g. This type of activity is an important contribution to total energy expenditure and may be included in weekly exercise prescription for clients.
2.4	<p>Aspects of current health status affecting exercise safety and capacity are described in terms of implications for exercise prescription.</p> <p>Range: illness, injury, medication, energy levels, stress levels, nutritional status; special population groups may include but are not limited to –pregnant women, postnatal women, diabetes, asthmatics.</p>	<p>Candidate is able to <u>describe</u> how an individual's current health status affects exercise capacity and safety (all range variables must be covered in answer) e.g.</p> <ul style="list-style-type: none"> • Illness: e.g. Those who are ill and have resting heart rates 10 – 20 beats above normal, need to consider whether exercise is appropriate or extra rest is required. • Special population groups: e.g. Pregnant women need to maintain heart rates within ACOG exercise guidelines etc.
2.5	<p>Aspects of current activity and lifestyle status affecting exercise safety and capacity are described in terms of exercise prescription implications.</p> <p>Range: occupational activity and stress levels, discretionary activity levels and goals including competition, family and home commitments, social activity, sleep patterns, nutrition patterns.</p>	<p>Candidate is able to <u>describe</u> how aspects of current activity and lifestyle status affect exercise capacity and safety. (range variables must all be covered in answer), e.g.</p> <ul style="list-style-type: none"> • Sleep patterns: e.g. Disrupted sleep patterns may have a negative effect on training adaptation and performance gains • Discretionary activity levels: e.g. Discretionary activity (including competition) need to be accounted for in weekly exercise loads, so over training and poor training adaptation does not occur.

2.6	<p>The purpose and benefit for potential clients and/ or participants of each key element of physical activity screening are explained.</p> <p>Range: key elements - age, activity status, health history in terms of significant conditions, family history of cardiovascular disease, current health status, use of medication, doctor's recommendation (if known) re exercise, smoking history, blood pressure, informed consent.</p>	<p>Candidate is able to explain the purpose and benefits of aspects of physical activity screening for potential clients and /or participants (all range variables must be covered in answer) e.g.</p> <ul style="list-style-type: none"> • Age: e.g. Age affects optimal training heart rate range and exercise capacity, so this aspect of screening needs to be known by instructors/ trainers. • Blood pressure: e.g. knowing a participant's BP is important for determining hypertensive and hypotensive states, as this has direct bearings on exercise commencement and exercise prescription. • Informed consent: e.g. An informed consent as part of the screening exercise means that the client/ participant takes responsibility for entering an exercise programme, based on information received.
-----	--	---

Element 3: Identifying principles underlying contraindicated exercises and exercise protocols.

Task:

Written documentation, e.g. Multiple choice/ short answer questions/ case studies/ essays etc. And/ or Oral questioning/ interview.

Performance criteria	Evidence
<p>3.1 Injury mechanisms in exercise technique are identified, and are described in terms of the structures affected.</p> <p>Range: mechanisms - excessive force and speed, momentum, excessive range, joint locking body (mis)alignment, Valsalva manoeuvre; structures - muscles, tendons, ligaments, muscle origins, bones, joints, spinal column, nerves, cardiovascular system, central nervous system.</p>	<p>Candidate is able to identify common injury mechanisms which occur in exercise technique and describe how these mechanisms affect the underlying structure. (range variables must all be covered in answer):</p> <p>Exercise technique issues include:</p> <ul style="list-style-type: none"> • Excessive force and speed • Excessive ROM • Body/ postural misalignment <p>Structural effects include:</p> <ul style="list-style-type: none"> • Muscle strains/ sprains • Boney fractures • CNS changes e.g. Pinched nerves, etc.

3.2	<p>Injury mechanisms in exercise protocols are identified in terms of the structures affected.</p> <p>Range: mechanisms – load, repetitions, recovery intervals, fatigue, and creation of muscle imbalance; structures - muscles, tendons, ligaments, muscle origins, bones, joints, spinal column, nerves, cardiovascular system, central nervous system (CNS).</p>	<p>Candidate is able to identify injury mechanisms which may occur in exercise protocol and describe the effect these issues may have on body structures (all range variables must be included):</p> <p>Exercise protocol issues include:</p> <ul style="list-style-type: none"> • Loading • Repetition ranges • Recovery intervals • Muscle imbalance • Fatigue states <p>Structural effects include: (e.g.)</p> <ul style="list-style-type: none"> • Muscle/ tendon alignment • Postural/ biomechanical changes Etc.
<p>Element 4: Identify the role of preparation (warm up), and recovery (cool down), in active sessions.</p> <p>Range: activity session characteristics – safety, psychological, duration, intensity, energy requirements, flexibility requirements, environment.</p>		
<p>Task: Written documentation, e.g. Multiple choice/ short answer questions/ case studies/ essays etc. And/ or Oral questioning/ interview.</p>		
Performance criteria		Evidence
4.1	<p>The role of preparation is described and the characteristics of preparatory activity are related to activity session characteristics.</p>	<p>Candidate is able to <u>describe</u> the role of <u>preparation</u>, and then describe how preparatory issues relate to each of the activity session characteristics in the range. E.g.</p> <ul style="list-style-type: none"> • Safety: exercise sessions should include a warm-up phase to prevent tissue injury and extremes in cardiovascular response. • Environment: prior to commencing exercise the environment should be safe, e.g. Unobstructed area, equipment checked, correct clothing for outside/ cold weather training etc. • Flexibility requirements: the warm-up needs to be specific to the requirements of the exercise session, and usually includes stretching of muscles/ ligaments.

4.2	The role of recovery is described and the characteristics of recovery activity are related to activity session characteristics and requirements for subsequent activity and/or performance.	Candidate is able to <u>describe</u> the role of recovery, and relate the characteristics of recovery activity to all activity session characteristics in the range. E.g. <ul style="list-style-type: none"> • Safety: exercise sessions should include a cool-down phase to allow metabolic / cardiovascular response to return to normal. • Flexibility requirements: stretching muscles at the end of exercise will enhance improved flexibility and assist in injury prevention.
-----	---	--

Element 5: Identify developmental stretching to enhance flexibility.

Task: Written documentation, e.g. Multiple choice/ short answer questions/ case studies/ essays etc.

And/ or Oral questioning/ interview.

	Performance criteria	Evidence
5.1	Safety aspects of flexibility are identified, and are described with reference to adequate ranges of movement for major joint structures. Range: neck, shoulder, spine, hip, knee, ankle.	Candidate is able to identify the safety aspects of flexibility with reference to the normal ROM for each major joint structure listed in the range: <ul style="list-style-type: none"> • E.g. Knee - normal ROM described for flexion, extension, limited rotation in knee flexion.
5.2	Types of stretching are identified and described in terms of their characteristics, effects and safety implications. Range: range of motion (ROM), dynamic, static, ballistic, proprioceptor neuromuscular facilitation (PNF).	Candidate is able to identify and describe each of the flexibility terms in the range statement. E.g. <ul style="list-style-type: none"> • Static stretching: the target muscle is lengthened slowly (to inhibit firing of the stretch reflex), and held in a comfortable range for 15-30 sec.
5.3	The uses of types of stretching are described within the context of a session of fitness activity. Range: ROM, dynamic, static, ballistic, CR.	Candidate is able to describe the context in which each of the different types of stretches would be utilised in a fitness activity E.g. <ul style="list-style-type: none"> • Contract-relax (CR) or PNF stretching can be utilised at the end of a fitness session for those individuals not at risk. Those 'at risk' include pregnant exercisers and deconditioned beginner exercisers.

Element 6: Identify clothing, footwear and equipment requirements for safe activity.

Task: Written documentation, e.g. Multiple choice/ short answer questions/ case studies/ essays etc.

And/ or Oral questioning/ interview.

Performance criteria		Evidence
6.1	<p>Clothing requirements for safe fitness activity are identified, and are described in terms of safety implications.</p> <p>Range: fitness activity - exercise-to-music classes, resistance training, ergometer use, walking, stairclimbing, running, cycling, swimming, or other cardio-vascular related fitness activity; safety implications - freedom of movement, temperature control, injury protection, hygiene.</p>	<p>Candidate is able to identify clothing requirements for fitness activity, and describe the safety implications relating to clothing in the range stated e.g.</p> <ul style="list-style-type: none"> • Clothing on <u>ergometers</u> should be tucked in to prevent the clothing getting caught as the seat slides forwards and backwards. • Clothing worn in <u>exercise-to-music</u> settings should be of the type to allow freedom of movement.
6.2	<p>Footwear requirements for safe fitness activity are identified, and are described in terms of safety implications.</p> <p>Range: fitness activity - exercise-to-music classes, resistance training, ergometer use, walking, stairclimbing, running, cycling, swimming; safety implications - traction, stability, impact, cushioning, sizing, hygiene, protection, freedom of movement, temperature control, injury protection.</p>	<p>Candidate is able to identify footwear requirements for safe fitness activity, and describe the safety implications in the range stated e.g.</p> <ul style="list-style-type: none"> • Footwear for running should provide adequate cushioning, traction, stability, impact absorption and be the correct size. • Appropriate footwear should be worn in areas where resistance training is taking place for injury prevention.
6.3	<p>Equipment requirements for safe fitness activity are identified, and are described in terms of safety implications.</p> <p>Range: fitness activity - exercise-to-music classes, resistance training, ergometer use, walking, stairclimbing, running, cycling, swimming; safety implications - freedom of movement, temperature control, injury protection, hygiene.</p>	<p>Candidate is able to identify the equipment requirements for safe fitness activity, and describe the safety implications in the range stated e.g.</p> <ul style="list-style-type: none"> • Steps used in exercise-to-music classes must be checked and maintained regularly. • Barbells must have collars correctly tightened/ checked prior to use. • Machine weights need cables regularly checked and maintained etc.

Element 7: Identify environmental hazards to safe exercise and strategies for negating and minimising environmental hazards.

Range: temperature extremes, ventilation, exercise surfaces (hardness, security, traction), obstacles, glass (windows, doors), crowding, sound levels.

Task: Written documentation, e.g. Multiple choice/ short answer questions/ case studies/ essays etc.

And/ or Oral questioning/ interview.

Performance criteria		Evidence
7.1	Environmental hazards to safe exercise are identified, and are described in terms of safety implications and HSE requirements.	<p>Candidate is able to identify the environmental hazards to safe exercise and describe strategies for minimising and/or negating risks associated with hazards, in all of the range variables e.g.</p> <ul style="list-style-type: none"> • Adequate ventilation must be provided in higher use areas such as aerobic classes, gym areas. • Sound levels in all areas of use must remain within the Occupational, Safety and Health guidelines. • Obstacles must not block fire exits. • Exercise surfaces should be appropriate for the type and frequency of usage.
7.2	Strategies for negating and minimising environmental hazards are identified, and are described in terms of action required on the part of employers, fitness professionals, and exercise participants.	<p>Candidate is able to identify the strategies for negating and/ or minimising environmental hazards in exercise settings in terms of action required by employers, fitness professionals and exercise participants in the range variables stated e.g.</p> <ul style="list-style-type: none"> • Opening/ closing procedures for controlling ventilation, temperature extremes must be followed. • OSH guidelines for sound levels must be adhered to. • adequate training in emergency evacuations and emergency procedures must be undertaken by fitness professionals • High risk hazardous areas/ structures must have adequate and current signage. • Regular checks of hazards should take place within a shift on a daily basis, e.g. ensuring fire exits are not blocked by obstacles; ensuring equipment is working and safe, ensuring that exercise surfaces provide adequate traction etc.

Unit 7022v3 Checklist

Demonstrate knowledge of the principles of safe physical activity

Assessor name: _____

Organisation name: _____

Element 1: Describe standard physiological responses to physical activity.	
1.1	<p>Effects of commencing, sustaining and ceasing physical activity are described in terms of acute physiological responses.</p> <p>Range: exercise variables - duration, intensity, volume, type (body position, sustained or intermittent); Physiological responses - cardio-respiratory, query solidus and/or vascular responses, cardiovascular responses, blood pressure, body temperature responses, energy production (major energy systems), metabolism, recovery responses.</p>
1.2	<p>Effects of sustained changes in physical activity levels are described in terms of chronic physiological adaptations.</p> <p>Range: physical activity variables - time period; type of activity (exercise mode), frequency, volume and intensity of activity; Physiological adaptations - cardiovascular, (capacity, structure, blood pressure); pulmonary, muscular, skeletal, metabolic (metabolic rate, thermoregulation), body composition.</p>
Element 2: Identify purpose, criteria and methods of verbal and written screening assessments	
2.1	<p>Personal characteristics significant for exercise prescription are described in relation to exercise capacity.</p> <p>Range: age, gender, body type, health history, activity history, current health status including medication, current activity levels.</p>
2.2	<p>Health history factors affecting exercise capacity and safety are described in terms of exercise prescription implications.</p> <p>Range: medical history, injury history, family predisposition's.</p>
2.3	<p>Activity history factors affecting exercise capacity and safety are described in terms of exercise prescription implications.</p> <p>Range: occupations (level and type of activity, characteristic postures and positions), discretionary physical activity (level and type of sporting and leisure activity, walking and cycling for transport).</p>
2.4	<p>Aspects of current health status affecting exercise safety and capacity are described in terms of implications for exercise prescription.</p> <p>Range: illness, injury, medication, energy levels, stress levels, nutritional status; special population groups may include but are not limited to –pregnant women, postnatal women, diabetes, asthmatics.</p>

2.5	Aspects of current activity and lifestyle status affecting exercise safety and capacity are described in terms of exercise prescription implications. Range: occupational activity and stress levels, discretionary activity levels and goals including competition, family and home commitments, social activity, sleep patterns, nutrition patterns.	
2.6	The purpose and benefit for potential clients and/ or participants of each key element of physical activity screening are explained. Range: key elements - age, activity status, health history in terms of significant conditions, family history of cardiovascular disease, current health status, use of medication, doctor's recommendation (if known) re exercise, smoking history, blood pressure, informed consent.	
Element 3: identifying principles underlying contraindicated exercises and exercise protocols.		
3.1	Injury mechanisms in exercise technique are identified, and are described in terms of the structures affected. Range: mechanisms - excessive force and speed, momentum, excessive range, joint locking body (mis)alignment, Valsalva manoeuvre; structures - muscles, tendons, ligaments, muscle origins, bones, joints, spinal column, nerves, cardiovascular system, central nervous system.	
3.2	Injury mechanisms in exercise protocols are identified in terms of the structures affected. Range: mechanisms – load, repetitions, recovery intervals, fatigue, and creation of muscle imbalance; structures - muscles, tendons, ligaments, muscle origins, bones, joints, spinal column, nerves, cardiovascular system, central nervous system (CNS).	
Element 4: Identify the role of preparation (warm up), and recovery (cool down), in active sessions. Range: activity session characteristics – safety, psychological, duration, intensity, energy requirements, flexibility requirements, environment.		
4.1	The role of preparation is described and the characteristics of preparatory activity are related to activity session characteristics.	
4.2	The role of recovery is described and the characteristics of recovery activity are related to activity session characteristics and requirements for subsequent activity and/or performance.	
Element 5: Identify developmental stretching to enhance flexibility.		
5.1	Safety aspects of flexibility are identified, and are described with reference to adequate ranges of movement for major joint structures. Range: neck, shoulder, spine, hip, knee, ankle.	
5.2	Types of stretching are identified and described in terms of their characteristics, effects and safety implications. Range: range of motion (ROM), dynamic, static, ballistic, proprioceptor neuromuscular facilitation (PNF).	
5.3	The uses of types of stretching are described within the context of a session of fitness activity. Range: ROM, dynamic, static, ballistic, CR.	
Element 6: Identify clothing, footwear and equipment requirements for safe activity.		
6.1	Clothing requirements for safe fitness activity are identified, and are described in terms of safety implications. Range: fitness activity - exercise-to-music classes, resistance training, ergometer use, walking, stairclimbing, running, cycling, swimming, or other cardio-vascular related fitness activity; safety implications - freedom of movement, temperature control, injury protection, hygiene.	

6.2	Footwear requirements for safe fitness activity are identified, and are described in terms of safety implications. Range: fitness activity - exercise-to-music classes, resistance training, ergometer use, walking, stairclimbing, running, cycling, swimming; safety implications - traction, stability, impact, cushioning, sizing, hygiene, protection, freedom of movement, temperature control, injury protection.		
6.3	Equipment requirements for safe fitness activity are identified, and are described in terms of safety implications. Range: fitness activity - exercise-to-music classes, resistance training, ergometer use, walking, stairclimbing, running, cycling, swimming; safety implications - freedom of movement, temperature control, injury protection, hygiene.		
Element 7: Identify environmental hazards to safe exercise and strategies for negating and minimising environmental hazards. Range: temperature extremes, ventilation, exercise surfaces (hardness, security, traction), obstacles, glass (windows, doors), crowding, sound levels.			
7.1	Environmental hazards to safe exercise are identified, and are described in terms of safety implications and HSE requirements.		
7.2	Strategies for negating and minimising environmental hazards are identified, and are described in terms of action required on the part of employers, fitness professionals, and exercise participants.		
DATE	CANDIDATES SIGNATURE	ASSESSORS SIGNATURE	C/NYC
Comments:			

Note: the assessor needs to ensure **sufficiency** of performance and knowledge. Therefore the assessor needs to know that the Candidate has performed the tasks competently many times before and will be competent in the future. Ticking/ dating the boxes more than once, having 2 checklists for different assessment occasions or observing workplace performance over a period of time can show this.