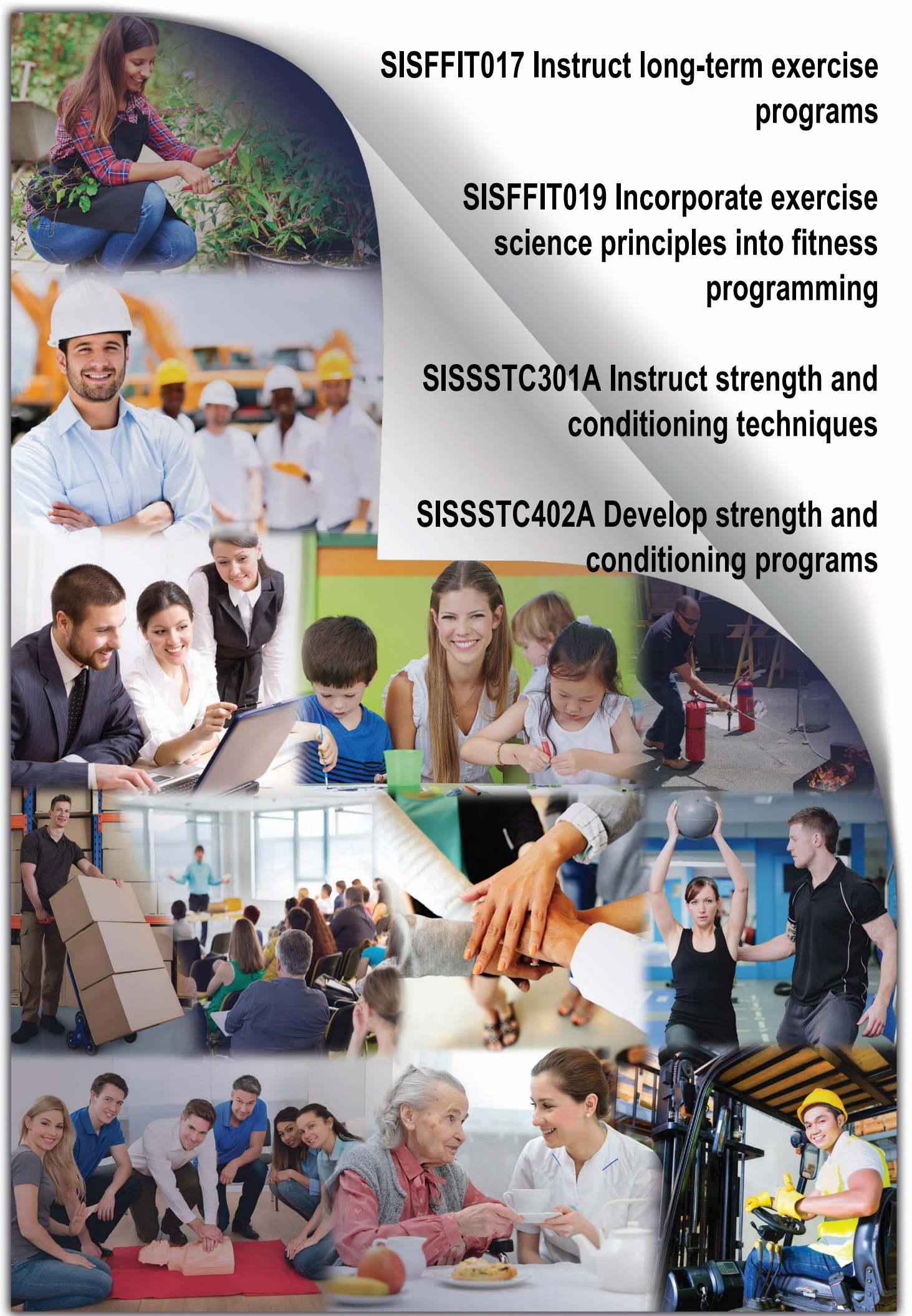




SISFFIT017 Instruct long-term exercise programs

SISFFIT019 Incorporate exercise science principles into fitness programming

SISSSTC301A Instruct strength and conditioning techniques

SISSSTC402A Develop strength and conditioning programs

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ASSESSMENT FOR SISFFIT017, SISFFIT019, SISSTC301A & SISSTC402A

Student name	
Date of assessment submission	Click here to enter a date.
Trainer/Assessor's name	
Date of assessment marking	Click here to enter a date.
Outcome for units	☐ Competent ☐ Not Yet Competent

TASK INSTRUCTIONS

- The assessment for these units of competency consists of the following:
 - **Case studies:** You are required to provide written responses to a series of case study scenarios to demonstrate your knowledge and skills.
 - **Practical tasks:** You will be required to put your knowledge and skills into practice, through observed tasks and work experience.
- At times, you will be provided with a specific context to which you must respond, otherwise it is anticipated that you will use a scenario of your choosing to provide context to the task.

CASE STUDIES

CASE STUDY 1

Part A:

Greg is a 50 year old with high blood pressure. He has been sent to you by his GP to help begin an exercise regime to help improve his current health. As he is a beginner in the gym, he has a few questions he would like you to give him advice on:

- a) What can Greg expect to happen to his body as a response to resistance and cardiovascular training?
- b) What would the 'best' method of training be for Greg's current condition?
- c) Are there any exercises Greg would not be able to do initially? What are the reasons behind this?
- d) Greg hasn't been told by his doctor to improve his flexibility. Why do you think he should 'bother' doing this in your sessions? Suggest five (5) key stretches and mobility exercises Greg should incorporate into his everyday activity.

Complete an example of how you would program the first month of Greg's cardio training using the template below.

Part B:

After six (6) months, Greg returns from his GP with good news – his blood pressure reading has returned to a safe level and his risk stratification has now been reduced. As such, Greg is now clear to undertake medium to high intensity training.

Greg has the exercise bug – he is excited about trying some new things and experiencing more of what the gym has to offer. Greg asks you to design him a full month program with new exercises and a month of cardio training including one HIIT session per week. Greg asks that you avoid the treadmill and any movement that requires rapid changes of body height.

Undertake the following:

- Use the 'Fit To Learn Program Card' to design two (2) resistance sessions per week
 - Greg's original program used the following circuit of exercises – Body weight squat, Seated machine row, Machine chest press, Lateral raises x3
- Use the 'Fit To Learn Month Programming Sheet' to create a month resistance plan for Greg
- Use the 'Fit To Learn Month Programming Sheet' to create a month cardio plan for Greg

	Response
a)	Decreased – blood pressure, heart rate (resting), respiration rate, body fat Increased – tidal volume, stroke volume, muscle mass,
b)	A mix of high rep medium weight resistance training on machines, some free weight interaction. Steady state cardio training until his training experience increases
c)	- Any exercises that require rapid changes in body height - any iso holds - any exercises where he needs to lift weight above head or from above head
d)	Flexibility is important for all people, he should look to improve so that his everyday life and function improves. He will move better, have better posture and increase mobility as he gets older

Week	Example	1	1	2	2	3	3	4	4
Session A	Equipment: Bike Method: HIIT Level: 7:3 Time: 30 min 30s:90s	10 min Level 3 Tread mill No incline	15 min Level 3 Tread mill No incline	10 min Level 5 Tread mill No incline	15 min Level 5 Tread mill No incline	10 min Level 6 Tread mill Incline 1	15 min Level 6 Tread mill Incline 1	20 min Level 6 Tread mill Incline 0	20 min Level 6 Tread mill Incline 1
Session B		10 min Level 3 Bike RPM 60	15 min Level 3 Bike RPM 65	10 min Level 5 Bike RPM 60	15 min Level 5 Bike RPM 65	10 min Level 6 Bike RPM 70	15 min Level 6 Bike RPM 75	20 min Level 6 Bike RPM 75	20 min Level 6 Bike RPM 75

Outcome for Case Study 1	☐ Satisfactory ☐ Not satisfactory
Trainer/Assessor comments	

CASE STUDY 2

Virginia is a 29 year old office worker. She has approached you after being a consistent member of your gym for the last nine (9) years. While being very active in the gym, she feels she is stuck in a rut. Virginia has just started an office job after being in a physical role in her previous working life. She is now noticing she is getting aches and pains in her back and neck.

Virginia is excited about learning new things to do in the gym. She has just purchased a heart rate monitor watch – she would like to know more about what the heart rate zones mean and how she can use them to monitor her training load. Virginia is considering training to run a half-marathon so is interested in the physiological adaptations that would occur with this type of training. She can currently run 10km in 58 minutes.

Respond to the following:

- Would you recommend Virginia to an Allied Health Professional (AHP)? If yes, what type?
- Virginia has always trained using RPE. She would like to know what benefits there are to having the HR monitor.
- Virginia would like a brief description of:
 - What happens to her heart when she starts exercising
 - What the long term changes are with consistent training
- Virginia would like your opinion on what has happened to her posture now that she has changed work roles. She is confused as to why this would happen.

Develop the following programs for Virginia:

- Use the 'Fit To Learn Program Card' to design three (3) resistance sessions per week
 - Virginia's original program was filled with traditional movements. She would like to train more with battle ropes, bands, kettlebells and body weight exercises.
- Use the 'Fit To Learn Month Programming Sheet' to create a month resistance plan for Virginia
- Use the 'Fit To Learn Month Programming Sheet' to create a month cardio plan for Virginia

	Response
a)	As Virginia has general aches and pains she could be sent to: GP Physio
b)	Having a HR monitor gives you 'real time' feedback. As RPE can be subjective, the HR monitor actually gives an indicator as to how hard someone is working against their maximum HR.
c)	As soon as she starts to move her body required oxygen to be pumped from the heart to more places around the body. As the need for oxygen increases, her stroke volume will increase meaning more blood is moved per pump. Over time, Virginia would become more efficient, requiring less BPM to move the same amount or more oxygen around the body. Her RHR would lower, stroke volume decreases and respiration rate would decrease while still delivering the same amount or more oxygen.
d)	There is a chance that now she is sitting more, she may be sitting too much, so her posture may not be called into action as much. She may look at a screen for too long, meaning her head tilt could be putting pressure on her traps and upper back. A change in activity levels means previously used muscles may not be getting the same amount

	of work as they previously would
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Outcome for Case Study 2	☐ Satisfactory ☐ Not satisfactory
Trainer/Assessor comments	

CASE STUDY 3

Patrick has recently joined you at the gym for Year 10 Work Experience. He mentioned that he is excited about growing his muscles once he turns 16 and can join your gym. Patrick is very interested in learning new exercises and would eventually like to study to be a personal trainer.

As he is new to the gym, Patrick has some questions he would like you to address:

- What is DOMS? Should he expect to feel it all the time? What will happen to Patrick's nervous system as he adapts to training?
- If Patrick trains every day, will his muscles grow to the best of their ability?
- As Patrick is quite skinny at the moment, is there anything inside his body that would protect him if he tried to lift a weight that was too heavy?
- What is the muscle fibre that is most likely to grow?
- Patrick would like to get better at school PE. How can he work on his reflexes and coordination? What would start to happen to Patrick if he trained it consistently?
- Patrick would like some direction to places online where he can read good information on weight training.
- Patrick would like to understand the difference between 'power' and 'strength'. He would like to know whether he should just always train hypertrophy so he can get big.

Develop the following programs for Patrick to compare:

- Use the 'Fit To Learn Month Programming Sheet' to create a month resistance plan for hypertrophy
- Use the 'Fit To Learn Month Programming Sheet' to create a month resistance plan for strength

	Response
a)	DOMS – Delayed Onset Muscle Soreness No he shouldn't expect to feel it all of the time, what will happen over time is his body will adapt and the soreness will decrease. Due to progressive overload his body should always be challenged, so he will still have some discomfort but it becomes a 'normal' part of his exercise. As his body adapts to training his neural system becomes more efficient in recruiting muscle fibres.
b)	They will grow initially, but he is at risk of overtraining if he does not allow for adequate recovery. A balanced program can be achieved with training everyday, but at his age he would not need to train this often to get good results.
c)	Yes, the stretch reflex operates as a feedback mechanism to control muscle length by causing muscle contraction. In contrast, the tendon reflex operates as a feedback mechanism to control muscle tension by causing muscle relaxation before muscle force becomes so great that tendons might be torn. Although the tendon reflex is less sensitive than the stretch reflex, it can override the stretch reflex when tension is great, for example, causing a person to drop a very heavy weight. The sensory receptors for this reflex are called tendon Golgi receptors, which lie within a tendon near its junction with a muscle. Tendon organs detect and respond to changes in muscle tension that are caused by muscular contraction, but not a passive stretch.
d)	Usually people get a response from Type II fibres in regards to growth. They are the most responsive to training
e)	Coordination and reflexes can be trained just like any other components of fitness. As he trained more and more often, the neural response in fast twitch fibres would improve increasing his ability to react. To improve he could do reaction based drills that do not have a planned path making him react. Using colour screens to increase reflexes and reaction time. Doing things like juggling can increase the coordination of an individual

f)	For strength training: • ASCA • Fitness Australia website General interest • Bodybuilding.com • T-Nation
g)	Training for hypertrophy is indeed the best way to increase muscle growth. What is likely to happen after a length of time training is the body hits a plateau. So by incorporating some strength and power training, he would in the long term increase his likelihood of growing more, as his body would increase its capacity to lift larger volumes of weight, and also increase connective tissue strength reduce the risk of injury The difference between the 2 styles of training is the desired outcome: Strength is the ability to move a heavy weight – so the style of training is suited to training the body to move a weight with no real desire to move it quickly Power is the ability to produce force – so the training is focused on moving a lighter weight in a more ballistic/explosive fashion While both may share similar sets and reps in programming, the weight percentage is a large difference, strength being much heavier than power.

Outcome for Case Study 3	☐ Satisfactory ☐ Not satisfactory
Trainer/Assessor comments	

CASE STUDY 4

With an experienced athlete client, complete the following:

- Provide a 50 word description of the sport and desired movement patterns and needs for the sport and position of the athlete.
- Conduct a pre-exercise screening, using the provided template
 - Select and conduct appropriate fitness testing, using technology
 - Complete goal setting and develop objectives for long term programming, discussing the objectives with the client and any support personnel
- Develop a year periodised plan that incorporates a full season of their sport
 - Within the plan, select one (1) month of training from a specific phase (e.g. pre-season, in-season, off-season) and develop a full block of training sessions to meet their goals. Show an understanding of the major body systems, bones, joints, muscles and their function to select appropriate exercises to meet the client's needs. Be sure to include:
 - Drills, activities and games to teach the techniques of strength and conditioning, using technology
 - Resistance training sessions
 - Cardiovascular training sessions using consistent HR or RPE monitoring
 - Core lifts and exercises
 - Flexibility
 - Plyometrics
 - Speed and agility using consistent HR or RPE monitoring
 - Recovery
 - A one week planner with sessions, using the template provided
- After undertaking the sessions (Practical Task C):
 - Complete a written evaluation of at least three (3) of the training sessions, using the provided template
 - Have the client complete feedback in a Training Diary for at least three (3) of the sessions
 - Implement and document changes to the sessions based on feedback

Throughout this task, implement appropriate storage and filing of all client information according to confidentiality policies and procedures.

	Response
a)	Assessor's discretion.

Outcome for Case Study 4	☐ Satisfactory ☐ Not satisfactory
Trainer/Assessor comments	

CASE STUDY 5

With an inexperienced athlete client (of a different age, sex and sport/ position to the client in CASE STUDY 4), complete the following:

- a) Provide a 50 word description of the sport and desired movement patterns and needs for the sport and position of the athlete.
- b) Conduct a pre-exercise screening, using the provided template
 - Select and conduct appropriate fitness testing, using technology
 - Complete goal setting and develop objectives for long term programming, discussing the objectives with the client and any support personnel
- c) Create a minimum five (5) question pre-session wellness questionnaire for the athlete to complete prior to all sessions to check for common injuries and illnesses
- d) Select one (1) month of training from a specific phase (e.g. pre-season, in-season, off-season) and develop a full block of training sessions to meet their goals. Show an understanding of the major body systems, bones, joints, muscles and their function to select appropriate exercises to meet the client's needs. Be sure to include:
 - Drills, activities and games to teach the techniques of strength and conditioning, using technology
 - Resistance training sessions
 - Cardiovascular training sessions using consistent HR or RPE monitoring
 - Core lifts and exercises
 - Flexibility
 - Plyometrics
 - Speed and agility using consistent HR or RPE monitoring
 - Recovery
 - A one week planner with sessions, using the template provided
- e) After undertaking the sessions (Practical Task D):
 - Complete a written evaluation of at least three (3) of the training sessions, using the provided template
 - Have the client complete feedback in a Training Diary for at least three (3) of the sessions
 - Implement and document changes to the sessions based on feedback
- f) After a month training with you, the client reports a lower body soft tissue problem prior to attending your session. Using the provided template, write an email to one (1) common support person (e.g. physiotherapist, EP, coach) in an effort to check in on the client's load and any new contraindications to their training load (i.e. with the intention of planning a modified month of training for them).
 - Using one of the lower body programs created, provide an example of the modifications you would make to movements for two (2) weeks to avoid overloading this injury.

Throughout this task, implement appropriate storage and filing of all client information according to confidentiality policies and procedures.

	Response
a)	Assessor's discretion.
c)	Assessor's discretion.

Outcome for Case Study 5	☐ Satisfactory ☐ Not satisfactory
Trainer/Assessor comments	

PRACTICAL TASKS

You are required to have a suitable observer verify your ability to complete the following tasks. These tasks may be simulated or real. You are required to complete a minimum of 15 hours of supervised/observed practical experience across the following tasks.

TASKS	VERIFIED
A. For Greg (CASE STUDY 1), undertake simulations for the proposed resistance and cardio sessions. • Obtain documented informed consent • Develop the client's skill, agility, proprioception, balance, coordination, reaction time, controlled power movements, muscle contractility and force, bone strength, nervous system activation, submaximal and resting heart rates, and cardiovascular system adaptations. The sessions must individually or cumulatively incorporate a variety of methods and gym equipment, including: ○ Demonstration, explanation and instruction in the following: ▪ Cardiovascular – with and without electrical or non-electrical equipment ▪ Resistance – using body weight, free weights and contemporary fitness equipment, and a combination of compound and isolation exercises ▪ Flexibility – static, dynamic and proprioceptive neuromuscular facilitation (PNF) ▪ Exercises to change joint action, stabilisation of the body, and forces which act on the body during exercise ○ Use of injury prevention strategies specific to client needs and program ○ Competition or performance strategy into at least one (1) of the programs • Modify both personal training plans for client the client, addressing at least four (4) of the following: ○ Technical requirements ○ Changing needs due to fitness adaptations ○ Changing goals ○ Client needs, objectives, likes and dislikes ○ Technical difficulty adjustment of exercises Throughout this task, demonstrate appropriate leadership and communication, working within one's own scope of practice through – • Professional personal presentation and appearance • Sound and appropriate communication skills • Appropriate storage and filing of all client information according to confidentiality policies and procedures • Employing safe practices – including checking equipment and ensuring sufficient space for the sessions	☐
B. For Virginia (CASE STUDY 2), undertake simulations for the proposed resistance and cardio sessions. • Obtain documented informed consent • Develop the client's skill, agility, proprioception, balance, coordination, reaction time, controlled power movements, muscle contractility and force, bone strength, nervous system activation, submaximal and resting heart rates, and cardiovascular system adaptations. The sessions must individually or cumulatively	☐

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C. Undertake at least three (3) sessions with your experienced athlete client (CASE STUDY 4): • Demonstrating exercises and instruct correct use of equipment • Incorporating motivation techniques to maximise exercise program adherence • Monitoring intensity, technique and safety during the class • Recognising physiological, psychological and biomechanical changes that occur with strength and conditioning training to influence instruction and allow prompt response to difficulties • Documenting the results and achievements for all sessions Throughout this task, demonstrate appropriate leadership and communication, working within one's own scope of practice through – • Professional personal presentation and appearance • Sound and appropriate communication skills • Appropriate storage and filing of all client information according to confidentiality policies and procedures • Employing safe practices according to legislative and organisational requirements – including checking equipment and ensuring sufficient space for the sessions	☐

D. Undertake at least three (3) session with your inexperienced athlete client (CASE STUDY 5): • Demonstrating exercises and instruct correct use of equipment • Incorporating motivation techniques to maximise exercise program adherence • Monitoring intensity, technique and safety during the class • Recognising physiological, psychological and biomechanical changes that occur with strength and conditioning training to influence instruction and allow prompt response to difficulties • Documenting the results and achievements for all sessions Throughout this task, demonstrate appropriate leadership and communication, working within one's own scope of practice through – • Professional personal presentation and appearance • Sound and appropriate communication skills • Appropriate storage and filing of all client information according to confidentiality policies and procedures • Employing safe practices according to legislative and organisational requirements – including checking equipment and ensuring sufficient space for the sessions	☐
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Outcome for Practical Tasks	☐ Satisfactory ☐ Not satisfactory
Trainer/Assessor comments	