

SISFFIT003 Instruct fitness programs



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ASSESSMENT FOR SISFFIT003

Student name	Paul van der Merwe
Date of assessment submission	17/09/2018

Trainer/Assessor's name	Kymberley Sant
Date of assessment marking	24/09/2018
Outcome for units	☐ Competent ☒ Not Yet Competent

TASK INSTRUCTIONS

- The assessment for these units of competency consists of the following:
 - **Quiz:** You are required to complete a series of multiple choice questions to demonstrate your knowledge and skills.
 - **Short answer activities:** You are required to provide short written responses to a series of activities to demonstrate your knowledge and skills.
 - **Case studies:** You are required to provide written responses to a series of case study scenarios to demonstrate your knowledge and skills.
 - **Practical task:** 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.

QUIZ

QUESTIONS	CORRECT
1. Which of the following provide the best definition of 'overload'? Select all that apply. ☒ Placing additional demands on the body to ensure consistent improvement ☐ Placing more weight on the bar every set ☐ Ensuring physiological improvement by gradually increasing training load	☐
2. What is muscular endurance? ☒ The ability to sustain repeated contractions ☐ The ability for a muscle to never stop working ☐ Working with oxygen and carbohydrates to produce non-stop energy ☐ The amount of force a muscle produces in one instant	☒
3. What is ROM an indication of? ☐ Strength ☐ Balance ☒ Flexibility ☐ Speed	☒
4. Age, sex, goals, occupation and diet are some areas to establish when considering a client's... ☐ Screening ☒ Individuality ☐ Progression ☐ Programming	☒
5. Initially, which of the following should be included in a fitness program? ☐ Weights, Running, Swimming ☒ Resistance, Cardiovascular, Flexibility ☐ Crossfit, Stretching, Recovery ☐ Curls, Chin ups, Rowing	☒
6. Select three (3) key variables that produce overload. ☒ Frequency ☒ Weight ☐ Intent ☒ Duration	☒

7. What does RPE stand for? ☐ Rating personal excellence ☐ Rating personal experience ☒ Rate of perceived exertion ☐ Resistance program expectations	☒
8. What are the 4Rs of resistance overload? ☐ Repetitions, Rest, Recovery, Repeat ☒ Repetitions, Resistance, Rate, Rest ☐ Resistance, Rotation, Resting, Regulation ☐ None of the above	☒
9. Generally, which of the following is the best type of exercise for beginner clients? ☐ Isolation ☐ Easy ☐ Squats ☒ Compound	☒
10. What is rate? Select all that apply. ☒ The speed or tempo of eccentric movement ☒ The speed or tempo of concentric movement ☒ The length of pause in a movement	☒

Outcome for Quiz	☐ Satisfactory ☒ Not satisfactory
Trainer/Assessor comments	Great try!

SHORT ANSWER ACTIVITIES

A.

Define the following terms, identifying their importance to fitness training and programming.

Specificity	Implies specific modes of training will produce results that have little transfer to other systems.
Progressive overload	Training that places extra demands client's system above and beyond the amount that their body is used to; must have overload to have maximal gains in the training program. Often achieved through changing frequency, intensity, duration or type of training.
Contraindications	A contraindication is a specific situation in which a drug, procedure, or surgery should not be used because it may be harmful to the person.
Isolation exercise	exercises that involve only one joint and a limited number of muscle groups.
Split programming	Involves splitting a program of exercises, performing half 2 days a week and the other half on 2 different days. Involves more exercises and sets. Spreads workout over 4 days rather than 3.
Dynamic flexibility	Muscle taken to the end of its ROM Activity specific: not recommended for general public. Causes intra-muscular damage which occurs as a result of the initiation of the stretch reflex.
DOMS	Delayed onset muscle soreness is the pain and stiffness felt in muscles several hours to days after unaccustomed or strenuous exercise. The soreness is felt most strongly 24 to 72 hours after the exercise.
Maximal heart rate	The MHR (roughly calculated as 220 minus your age) is the upper limit of what your cardiovascular system can handle during physical activity.
Training matrices	Is a tool that can be used to track training and skill levels- Please review.
Super-sets	Using the agonist after using the agonist. Repeated until desired result achieved, usually exhaustion. - Please review. Please give another example on how to incorporate super-sets into a training program.
Pre-fatigue	Use of an isolation exercise to exhaust a specific muscle. A compound exercise involving the pre-exhausted muscle follows immediately.
Interval training	Taking regular breaks between high intensity periods of training. Please review

Outcome for Activity 1	☐ Satisfactory ☒ Not satisfactory
Trainer/Assessor comments	Great try, please review your answers where indicated.

B.

It is integral that a thorough screening and testing process is undertaken prior to the writing of an exercise program.

1. Why is this an important process?
2. What is the most important factor when beginning the program creation process?

Importance of screening and testing process

It will make the fitness instructor aware of the client's current health and inform them of any illness, injury or disabilities.

Most important factor when beginning

Take everything listed on the screening into consideration and base the program on the client's needs.

Outcome for Activity 2

- ☒ Satisfactory
☐ Not satisfactory

Trainer/Assessor comments

C.

Muscular strength and muscular endurance are outcomes of specific training methods.

1. What specific variables need to be manipulated in a training program to get either muscular strength or endurance? Discuss the differences in programming that would have to occur to achieve either of these desired outcomes.
2. Is it possible to write a program that would achieve maximal results for these two (2) components of fitness at the same time?

Manipulating variables

When looking to achieve muscular strength; the training program would consist of resistance training mainly. Based on the client, the weight will be higher, but the reps will be lower and completed at a slower pace.

When looking to achieve muscular endurance; the training program can consist of any type of training but also mainly resistance training. The exercises would consist of lower weights at max reps at a much faster pace.

Programming for both components

You can simultaneously improve both muscular strength and local muscular endurance with strength training. The ratio of improvements in strength and endurance will depend on the ratio of slow to fast fiber types in the muscles trained.

Regardless of the loads and repetition ranges used and regardless of the speed of movement, if an exercise is performed to the point of momentary muscular failure you will have recruited and stimulated improvements in all of the fibres in the targeted muscles, slow and fast.

Outcome for Activity 3

- ☒ Satisfactory
☐ Not satisfactory

Trainer/Assessor comments

Well done!

D.

Consider the training methods involved with aerobic and anaerobic systems.

1. Identify and describe two (2) methods of training that would best train a client to improve their cardiovascular endurance (aerobic system).
2. Identify and describe two (2) methods of training that would best train a client to improve their anaerobic system.
3. Describe why the methods in a) and b) are so different.
4. What training variables are manipulated to achieve the best results for these components of fitness?

Aerobic system training methods

Method 1:

Continuous Training – Training with no breaks for a period of time.

Method 2:

Fartlek training - involves varying your speed and the type of terrain over which you run, walk, cycle or ski.

Anaerobic system training methods

Method 1:

Interval Training – Training with short breaks and high intensity work intervals.

Method 2:

Circuit Training – Involves completing training at different stations. Can improve co-ordination, agility, balance and muscular endurance.- **please review, keeping in mind anaerobic system is used in activities that are not oxygen dependant and last for only a few seconds.**

Differences in methods

The methods in A are focused on strengthening your cardiovascular system and enables your body to complete long periods of physical work with minimal rest. The training methods in B focus on enabling your body to perform short sharp bursts of explosive energy quickly and efficiently, this is done by training the body to restore ATP faster. **The methods in A are also focused on increasing fast twitch muscles and the methods in B are mainly focused on improving slow twitch muscles.**- **please review (you may have these around the wrong way if Method A is referring to Aerobic system).**

Achieving best results

The trainings can vary in regards to the FITT principles, specificity, progressive overload and reversibility- **please go into a little more detail explaining how to train for each method.**

Outcome for Activity 4	☐ Satisfactory ☒ Not satisfactory
Trainer/Assessor comments	Good try, please review your answers as indicated.

E.

Explain the effects of different exercises on the following major body systems:

- Nervous
- Skeletal

Nervous

Recent examinations of the link between physical exercise and the central nervous system have shown positive effects on a wide range of brain health markers- **please go into a little more detail on the *different exercises* and the effect on the nervous system..**

Skeletal

Osteoblast activity increases when you exercise, so your bones will become stronger the more exercise you do. This means your bone calcium stores increase to cope with the demand for calcium, so exercising also reduces the risk of osteoporosis. **please go into a little more detail on the *different exercises* and the effect on the skeletal system**

Outcome for Activity 5

- ☐ Satisfactory
☒ Not satisfactory

Trainer/Assessor comments

Good try, please review your answers as indicated

CASE STUDIES

1.

Mark is an 18 year old who has some experience (less than 6 months) with resistance training. He is not interested in cardiovascular training, but has listed in his goals that he wants to reduce body fat and improve his general feeling of wellbeing. Mark is a non-smoker, but drinks most weekends. His other listed goals include improve strength and growth.

Mark is interested in training three (3) times per week for up to 90 minutes per session. He will be training with a training partner, who is of similar experience. Mark is currently working as an apprentice carpenter, and complains of tightness in his lower back.

Respond to the following points:

1. Consider what you should do with Mark before he even enters the gym:
 - Identify some general advice you could give Mark with regards to meeting his goals. Consider the signs and symptoms of training intolerance.
 - Would you recommend Mark to an Allied Health Professional (AHP) before commencing work with him?
2. Consider the most appropriate training style for Mark:
 - Is it a good idea for Mark to completely ignore cardiovascular training?
 - With his listed goals, is resistance training alone going to be the best method to achieve them?
 - Suggest a basic circuit training session that Mark could use to keep up his cardiovascular fitness while still suiting his preferences. Calculate Mark's maximum heart rate (roughly calculated as 220 minus his age) and include the rate of perceived exertion in your description.
3. With Mark's goals in mind, create a program that best suits his current experience and time commitment to training. Use the *Fit to Learn Program Card* template.

Before entering the gym

General advice

I would review the client's goals and ask him to reflect on his goals and decide whether or not he believes they are achievable and measurable. Also explain that he will need to follow training procedures and advice from myself or possibly other health professionals.

AHP recommendation

I would recommend that Mark go and see a physiotherapist to address the pain in his lower back.

Training style

Ignoring cardiovascular training

Completely ignoring cardiovascular training is not necessarily a bad thing depending on the goals the client is trying to achieve. If Mark was also looking to improve on long distance running it would not be a good idea to ignore cardiovascular training.

Resistance training alone

When taking the listed goals into consideration, resistance training would be the best way for Mark to achieve growth and strength. Mark will not enjoy cardiovascular training if he is not interested in it.

Basic circuit training session

Mark has a MHR of 202 BPM. He can complete a basic circuit training session like the Superman or Spartacus circuit training sessions. He can also use a rowing machine or bicycle. These will keep the heart pumping and guarantee a reasonable amount of cardiovascular fitness.

FIT TO LEARN PROGRAM CARD					
Name	Mark				
Trainer	Paul van der Merwe				
Date	20 Aug. 18				
Goals/Aims	Strength Muscular growth				
Contraindications	Pain in lower back – refer to physio				
Session length	90 min				
Exercise	Sets	EPC	Reps	%1RM/Weight	Rest
<i>Squat</i>	3	202	8-10	70%	60 sec
Sit ups	3	202	20-25	80%	60sec
Push ups	3	202	20-25	80%	30sec
Russian twists (with medicine ball 6kg)	3	202	15-20	70%	60sec
Dumbbell lunges	3	202	10-15	80%	30sec
Overhead press	3	202	10-15	70%	60sec
Dumbbell curls	3	202	10-15	70%	60sec
Jumping squats	3	202	10-15	70%	60sec
Climbers	3	202	20-25	70%	60sec
Cardiovascular training method	Time/Distance			Level/Resistance/Intensity	
Step ups (Fast)	2min			70%	
Rowing machine	1min			80%	
Cool down	Light 1 min jog on treadmill				
Stretches	Stretch arms, stretch legs/groins, stretch back, stretch chest.				

Outcome for Case Study 1	☒ Satisfactory ☐ Not satisfactory
Trainer/Assessor comments	Good job!

2.

Refer to a pre-exercise health screening you have conducted with an individual of the general public (e.g. Case Study 3 of *SISFFIT001*, *SISFFIT006* & *SISXCCS001* Workbook).

Respond to the following points:

1. Use this information to create an exercise training program that suits the needs and goals of the individual. Use the *Fit to Learn Program Card* template.
2. From the exercise program created, select five (5) movements to examine further (include at least one body weight movement). Identify the muscles targeted by the movement as well as the joint action the movement encompasses.
3. Write a 300 word justification of your client's fitness program. Be sure to discuss:
 - Exercise selection
 - Exercise order
 - Connection to the client's goals
 - Programming requirements for balance and coordination
 - The importance of rest, EPC, %1RM, Sets
 - How you, as a trainer, can contribute to the ongoing fitness and health of your client over the long term
 - What you would change six (6) months in to your client's training, to ensure continued improvements and progressions
4. Plot the progressive overload that will exist for your client in both their cardiovascular and resistance training, using the table provided. Begin with Week 1 information and show how, over the course of six (6) weeks, you will adapt this training to ensure the client is continually going to improve their fitness and be challenged by your program.

FIT TO LEARN PROGRAM CARD					
Name	Greg				
Trainer	Paul van der Merwe				
Date	23/08/18				
Goals/Aims	Improve strength and cardiovascular fitness				
Contraindications	Early indications of hypertension Smokes half a pack a day				
Session length	60 min				
Exercise	Sets	EPC	Reps	%1RM/Weight	Rest
<i>Squat</i>	3	202	8-10	70%	60 sec
Kettlebell Swings	3	202	20-22	70%	60sec
Russian Twists	3	202	20-22	70%	60sec
Elbow plank	3	202	30sec	100%	60sec
Kettlebell deadlift	3	202	10-12	70%	60sec
Jumping Lunges	3	202	10-12	70%	60sec
Superman	3	202	20-22	70%	60sec
High Knees	3	202	30sec	80%	60sec
Good morning (kettlebell)	3	202	20-22	70%	60sec
Cardiovascular training method	Time/Distance			Level/Resistance/Intensity	
Rowing Machine	300m			60-70%	
Swimming	200m			60-70%	
Cool down	Light jog for 1 minute on treadmill				
Stretches	Stretch Arms, back, legs/groins and torso.				

Exercise	Muscles targeted	Joint action
<i>Example: Calf raise</i>	<i>Gastrocnemius, Soleus, Tibialis Anterior</i>	<i>Ankle: Dorsi and Plantar Flexion</i>
Bench press	Pectorals, Deltoids	Shoulder/Elbow
Russian twists	Abdominals, obliques	Back
Kettlebell deadlift	Quadriceps, soleus	knees
Kettlebell swings	Quadriceps, deltoids, abdominals, latissimus dorsi	Knees/shoulder
Good morning (kettlebell)	Latissimus dorsi	Groin

Program justification

- Exercise selection

The client was aiming to improve general strength but was showing early indications of hypertension, therefore I focused on exercises that improve strength while also getting the clients heart rate up to focus on strengthening the cardiovascular system.

- Exercise order

The exercises were set in an order to rotate and cycle between core strength, arms and legs.

- Connection to the client's goals

The client was looking to improve general strength, so these exercises are mostly full body exercises that aim to strengthen the core and major muscles around the body.

- Programming requirements for balance and coordination

The client will need to be able to hold their weight and be able to be stable on their two feet. They will also need to be able moves their arms and legs in opposite directions. They will also need to be able to hold weights in their hand and freely be able to move them around.

- The importance of rest, %1RM, Sets

The importance of rest is crucial in the body's recovery after training, the body needs an ample amount of rest after training for the muscles to recover fully otherwise the client will risk injury or muscle damage. The %1RM is important for measuring a client's max strength for one repetition, this can help determine a client's improvements or highlight areas where improvement is still required. The amount of sets the client does is important to cater for progressive overload.

- How you, as a trainer, can contribute to the ongoing fitness and health of your client over the long term

I can consistently encourage my client to eat as healthy as possible in order to reduce their symptoms of hypertension while making sure they stay motivated to train by writing them a new training program card every few months or weeks at their request to ensure they stay interested and stimulated. Also encourage the client to stop smoking, but this will also require a lot of commitment from the client.

- What you would change six (6) months in to your client's training, to ensure continued improvements and progressions

After six months if there are clear signs of improvement in my clients strength and health I would start focusing on progressive overload and also incorporating new exercises and heavier weights as the client starts to improve more and more.

RESISTANCE EXERCISE						
Exercise	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
<i>Example:</i> Calf Raise	Reps: 10 Sets: 3 %1RM: 70%	Reps: 12 Sets: 3 %1RM: 75%	Reps: 8 Sets: 3 %1RM: 75%	Reps: 10 Sets: 3 %1RM: 80%	Reps: 12 Sets: 3 %1RM: 85%	Reps: 8 Sets: 4 %1RM: 80%
Kettlebell swing	Reps: 20 Sets: 3 %1RM: 70%	Reps: 22 Sets: 3 %1RM: 75%	Reps: 22 Sets: 3 %1RM: 80%	Reps: 20 Sets: 4 %1RM: 75%	Reps 20 Sets: 4 %1RM: 80%	Reps: 22 Sets: 4 %1RM: 80%
Russian twists	Reps: 20 Sets: 3 %1RM: 70%	Reps: 22 Sets: 3 %1RM: 75%	Reps: 22 Sets: 3 %1RM: 80%	Reps: 20 Sets: 4 %1RM: 75%	Reps 20 Sets: 4 %1RM: 80%	Reps: 22 Sets: 4 %1RM: 80%
Kettlebell deadlift	Reps: 10 Sets: 3 %1RM: 70%	Reps: 12 Sets: 3 %1RM: 75%	Reps: 12 Sets: 3 %1RM: 80%	Reps: 10 Sets: 4 %1RM: 75%	Reps 10 Sets: 4 %1RM: 80%	Reps: 12 Sets: 4 %1RM: 80%
Good morning (kettlebell)	Reps: 10 Sets: 3 %1RM: 70%	Reps: 12 Sets: 3 %1RM: 75%	Reps: 12 Sets: 3 %1RM: 80%	Reps: 10 Sets: 4 %1RM: 75%	Reps 10 Sets: 4 %1RM: 80%	Reps: 12 Sets: 4 %1RM: 80%
Renegade row (kettlebell)	Reps: 10 Sets: 3 %1RM: 70%	Reps: 12 Sets: 3 %1RM: 75%	Reps: 12 Sets: 3 %1RM: 80%	Reps: 10 Sets: 4 %1RM: 75%	Reps 10 Sets: 4 %1RM: 80%	Reps: 12 Sets: 4 %1RM: 80%
CARDIOVASCULAR EXERCISE						
Exercise	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
<i>Example:</i> Treadmill	Time: 20 minutes Level: 4 Incline: 0%	Time: 25 minutes Level: 4 Incline: 3%	Time: 30 minutes Level: 5 Incline: 3%	Time: 15 minutes Level: 6 Incline: 3%	Time: 20 minutes Level: 6 Incline: 3%	Time: 30 minutes Level: 7 Incline: 0%
Treadmill	Time: 15 Level 6 Incline: 0%	Time: 20 Level 6 Incline: 0%	Time: 20 Level 5 Incline: 3%	Time 25 Level 6 Incline: 0%	Time: 20 Level 6 Incline: 3%	Time: 25 Level 6 Incline: 3%
Bicycle	Time: 15 Level 6	Time: 20 Level 6	Time: 20 Level 5	Time 25 Level 6	Time: 20 Level 6	Time: 25 Level 6
Rowing Machine	Distance: 500m Level: 6	Distance: 500m Level: 7	Distance: 600m Level 7	Distance: 500m Level 8	Distance: 600m Level 8	Distance: 500m Level 9
Swimming	Distance: 100m Sets: 3 Intensity: 70%	Distance: 150m Sets: 3 Intensity: 75%	Distance: 100m Sets 4 Intensity: 70%	Distance: 150m Sets: 4 Intensity: 75%	Distance: 200m Sets: 4 Intensity 80%	Distance: 200m Sets: 5 Intensity: 80%

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Outcome for Case Study 2	☐ Satisfactory ☒ Not satisfactory
Trainer/Assessor comments	This is a great submission. However, please review your answers for the Joint Action column.

PRACTICAL TASK

You are required to have a suitable observer verify your ability to complete the following tasks. These tasks may be simulated or real.

TASKS	VERIFIED
1. Over a period of at least eight (8) hours you are to plan, document, implement and evaluate five (5) fitness programs to suit clients' health-related goals and three (3) circuit training sessions with interrelated components. Each program/session must be developed during a separate client contact session, across which you are to complete the following: 1. Advise client of outcomes of pre-exercise health screening procedures 1. Refer client to medical or allied health professionals, as required 2. Select an appropriate area for the delivery of circuit training sessions, assemble resources and check equipment for safety and maintenance requirements. Research and document the facilities' policies and procedures with regards to: 1. Overcrowding 2. Ventilation and/or climate control 3. Hygiene 4. Participant to instructor ratio 5. Emergency 6. Standards of personal presentation 7. Participants' clothing and footwear 3. Demonstrate, explain and provide clear, supportive instruction for the following, including sets and reps, and program types (such as matrices, super-sets-, pre-fatigue and interval training): 1. Cardiovascular exercises 2. Dynamic warm-up and cool-down components 3. Resistance exercises (i.e. squat, static lunge, push-up, triceps dips, prone back extension, shoulder press, abdominal crunches, bent over row, lateral raise, modified dead lift, prone hover) 4. Flexibility exercises (i.e. static and dynamic stretches) 4. Use a variety of standard equipment for resistance and cardiovascular training (e.g. free weights, machines, proprioception and stability training equipment). Take into consideration the number of participants, documenting a floor plan illustration of your equipment layout to set out the circuit program. 5. Provide guidance on injury prevention strategies specific to client needs and the program 6. Monitor/evaluate exercise program at appropriate intervals: 1. Monitor client participation and performance to identify signs of exercise intolerance 2. Monitor clients' rate of perceived exertion 3. Observe loads lifted and adjust as required 4. Request feedback from clients 5. Respond to clients experiencing difficulties and answer questions as required 7. Modify programs for clients, addressing at least three (3) of the following: 1. Technical requirements 2. Changing needs due to fitness adaptations 3. Changing goals 4. Client needs/objectives/likes/dislikes	☐

5. Technical difficulty adjustments of exercises	
8. Complete client record forms and document session plans including identified modifications/adjustments needed)	
9. Review own performance and identify areas needing improvement, emphasis or attention in future sessions	

Outcome for Practical Task	☐ Satisfactory ☐ Not satisfactory
Trainer/Assessor comments	