Unit C2: Exercise and Fitness Skills Development

Level: **3**
Unit type: **Internal**

Guided learning hours: **180**

You can click in this box to go to the introductory section for our delivery guide. This provides an overview of:

- **The BTEC National Sport (2019) qualification suite, including the four pathways and links to occupational standards**
- **Employer engagement**
- **Incorporating Blended Learning**
- **Our support offer**

Approaching the unit

In this unit, learners will gain the knowledge and practical skills to plan and instruct a gym-based induction and exercise session for specific clients. To be able to do this effectively, it is necessary to have a good understanding of the anatomy and physiology of the main body systems. How these body systems respond to acute exercise and adapt to long term regular exercise participation is covered in this unit so that when learners are working as exercise instructors they have a full appreciation of how to prepare the body effectively to take part in exercise and also how to produce exercise plans to improve specific components of fitness as the body adapts to different types of training. Learners will also develop a basic understanding of the biomechanics involved in human movement and how adapting exercises such as the length of a lever can progress or regress an exercise to meet the needs of specific clients.

The unit includes a number of topics that will be new to some learners. With this in mind, it is important that theoretical content is delivered using a variety of methods, including presentations, discussions and posters, as well as in practical activities to demonstrate anatomy and physiology in action.

Access to a gym containing free weights, fixed resistance weights and cardiovascular equipment is essential as learners will need to explore how to support clients to use each type of equipment safely and effectively. Learners will benefit from a site visit to a health and fitness centre to experience how a gym is staffed and how it operates. They will see and experience the different types of equipment available and the procedures in place to keep clients safe, whilst taking part in exercise and

following an exercise programme.

Learners will explore different methods that are used to screen clients before taking part in a gym-based exercise session, and how they are essential to the initial start of the client and fitness instructor relationship. Consequently, learners will also be able to learn and practise the skills required for effective client care and engagement. The exercise requirements and contraindications for specific populations will be explored to enable the learner to feel empowered about working witha variety of clients if they chose an employment route as a fitness instructor.

Learners will use all the skills and information to plan, deliver and instruct a gym-based induction andexercise session, using the principles of training, so they will need access to a participant with whom they can run the session.

Delivering the learning aims

Learning aim A

Learning aim A focuses on the effects of exercise and sports performance on the main body systems. This content is essential for all fitness instructors as this knowledge could be used on a daily basis. Where possible, practical delivery to support applied learning is encouraged for this learning aim as the content is scientific and contains new technical terminology which can be challenging for learners.

For the content related to the cardiorespiratory system, learners would benefit from experiencing the changes made by the cardiorespiratory system during exercise. If you have the benefit of respiratory equipment such as a spirometer, it would be helpful to give learners hands-on practical experience of the functions of the respiratory system and allow them to design an experiment on the mechanics of breathing andthe process of gaseous exchange. This could also be replicated with heart rate, blood pressure andsweating. Many of these tests can be done within a fitness environment. Content related to the musculoskeletal system and the range of movement at joints can be delivered particularly well in a practical setting, reinforced with formal teaching. Having access to a skeleton will help to support learners understanding of the different bones, types of bones and their functions. Learners should be engaged in practical activities during the delivery of content on major muscles,muscular contraction, antagonistic muscle pairs and fibre types.

The energy systems can be taught through a combinationof teaching methods focused largely on learner-centred learning, using practical application wherever possible. Learners should be able to understand how the energy systems relate to different types of exercises within the gym environment. Methods including snowball learning can develop peer understanding and

learner engagement – this works well with anaerobic energy systems in particular. Practical teaching works particularly well showing how the energy systems produce energy at different rates and the rest periods required to fully recover such as in weight training the rest periods between sets, numbers of reps in a sets.

For the nervous system, learners will focus on the response of the nervous system to exercise. This topics will be new to many learners so teaching methods may include a combination of formal lectures, pair and group research and presentations, as well as independent study and peer teaching to allow learners to gain a full understanding of the topics. Practical application is encouraged wherever possible and learning can be reinforced by watching video recordings, taking part in class discussions and completing worksheets and practice assessments.

The principles of biomechanics in exercise and physical activity does introduce new technical terminology so it could be introduced through tutor presentations to give learners an understanding of common terms used. Further delivery can be achieved via a combination of methods focusing largely on learner-centred learning. Once learners have established the planes of movement, they can take an active part in identifying the effect of exercise variables on biomechanics and kinesiology. Learners could take part in different exercises and explore how altering the lever length affects the intensity of an exercise.

To help learners develop their knowledge of the body systems, a useful strategy might be to organise a trip to a university, science laboratory or museum. A subsequent group presentation with worksheets and tasks to follow is also another successful means of engaging learners.

Guest lecturers such as personal trainers can be invited to explore real-life examples of using anatomy and physiology on a daily basis. These speakers can also give first-hand knowledge of the importance of understanding anatomy and physiology, and answer questions from learners.

Learning aim B

This learning aim focuses on the customer and how to screen customers prior to them taking part in an exercise programme as well as how to support and form working relationships with them to help to improve customers participation in regular exercise.

Some learners may have already had experience of taking part in screening processes themselves if they are members of a gym. For learners that have not had this experience, a trip to a gym and experiencing a screening process through lifestyle questionnaires and health assessments will help to showcase how the process is carried out so that learners can gain tips from professionals as well as experience what it is like to be a customer with various potential concerns about the process to help to support their own approach to customer care. Having a fitness professional talk to learners about the importance of screening clients and how they

go about doing this in order to maximise customer satisfaction would also be a potential approach to this content area. They can also provide examples of screening questionnaires as well as giving simulatedinterviews with members of the class so that everyone can see what the process involves.

The benefits of regular physical activity can be understood by looking at case studies of clients whenthey have specific health conditions and learners can research and then present about the various methods available to improve client participation in regular exercise.

Methods to improve client participation in regular exercise can be covered through a learner centred approach with learners working in pairs or small groups to research the area for a specific type of client that they are given. They can then present their research to the rest of the group. This should provide a range of different approaches to meet different clients' needs.

Learning aim C

For this learning aim, learners should be engaged in practical activities based primarily in a gym environment combined with some theoretical delivery. To start with learners should be shown around the gym and given advice and guidance on how to keep the area clan and safe using a variety of cleaning equipment and substances. Advice and equipment where needed related to health and safety including PPE should be provided. Where possible learners should experience a gym induction and examine how a gym is kept safe and clean through a site visit and talks with health and fitness instructors. Learners should be introduced to each type of exercise equipment, how it works, how to set it up for a client and how to regress or progress the exercise. Learners can then work in pairs to deliver training for cardiovascular, fixed resistance, free weight and body weight exercises in the gym. They can thenstart to populate a session plan for a gym-based exercise session.

Once learners are confident on how to use and instruct clients on all of the gym equipment it would be helpful if learners could work with participants who are not their peers or who are not being taught this unit. This will help them to learn to correct people and to spot incorrect techniques, as well as learning appropriate methods for optimal client engagement in preparation for their assessment.

Learning aim D

This learning aim will introduce some new content for many learners and cover clients' needs that they would not have been aware of. It can be covered via a number of methods including formal lectures, independent research and use of guest speakers. Using group and paired work for research tasks will allow learners to explore sports and activities which are of particular interest to them. Contraindications and exercise requirements of antenatal and postnatal women, older adults, adolescents and people with disabilities will help provide a deeper understanding of anatomy and physiology and how the many variations in these populations impact on the planning and delivery of an effective gym-based exercise

session.
Leaners could take part in simulated activities where take on the role of a person from a specific population and the learner who is in the role of exercise instructor must ensure they adapt a gym session to take into account any contraindications related to the person from a specific populations needs.
Fitness professionals that specialise in a working with clients from specific populations could come and deliver presentations on how they have upskilled or developed their knowledge to work with these clients and discuss their own experience and tips on how to work effectively with these clients.

Learning aim E

Learners will need access to an appropriately equipped gym for the delivery and assessment of this part of the unit, together with a participant that is not a peer or family member in line with the CIMSPA assessment requirements, to instruct in the summative assessment.

Learners could take part in formative gym instruction sessions and the audio and visuals from these could be recorded so that learners can see how they performed in the delivery and instructing of the session. They can also check if there are areas on which they could improve. Learners should also be encouraged to ask for feedback from the participant to find out if the gym-based exercise is appropriate in terms of selection of exercise, timing, motivation, and teaching points. It would be beneficial if the feedback from participants also included strengths and areas for improvement in relation to the instructor's skill, such as communication and motivation. Learners should also gain feedback from the tutor to confirm their strengths and any areas for development to help with preparation for the summative assessment.

Transferable skills

Preparing for work

- Working with clients
- Customer service skills
- Planning exercise programmes
- Health and safety in a gym environment

Developing practical and technical skills

- Leading a gym session.
- Delivering an induction to a gym.
- Reviewing a clients practical performance
- Reviewing own performance
- Displaying appropriate skills and behaviours.
- Applying knowledge to real-life situations.
- Job roles, responsibilities and ways of working.

Legislation, regulations, policies and procedures

- Health and safety

- Equality and diversity.

Managing information

- Problem solving.
- Management of information.
- Self-management and development.

Key teaching areas in this unit include:		
Sector skills	**Knowledge**	**Transferable skills/behaviours**
• Communication/consultation processes • Organisation/preparation • Planning • Application of key knowledge • Reviewing/evaluating for future progress	• Anatomy and physiology • Client demographics and its impact on leisure choices • Engaging with customers • Using customer feedback to improve client experience • Safe methods of cleaning a fitness facility • Risk stratification and behaviour change	• Communication • Working with others • Thinking skills/adaptability • Problem solving • Management of information • Self-management and development

Employer involvement

This unit would benefit from employer involvement in the form of:

- Visits to health and fitness centres where gym instructors work
- Work placement or shadowing where learners can sit in on zoom calls within a health and fitness environment
- Industry practitioners (face to face or virtually) can be used as expert witnesses who can help with areas of assessment with guidance from the teacher or can be used to make up a panel of experts when learners deliver presentations
- Industry practitioners (face to face or virtually) could be used to deliver masterclasses in their areas of expertise

Assessment guidance

These are only suggestions, and assessor can utilise professional judgment, to support this please consider the selection cited within' key summary of the types of evidence used for BTEC Nationals' in Appendix 1 of the spec. Where unsure on use or considering different method utilise the 'ask the expert service'.

This unit is internally assessed. Learners will be required to produce three assignments. There is a maximum number of three summative assignments for this unit.

The relationship of the learning aims and criteria is:

Learning aim: A (A.P1, A.P2, A.P3, A.M1, A,D1)

Learning aims: B and C (B.P4, B.P5, B.M2, C.P6, C.P7, C.P8, C.M3, BC.D2)

Learning aims: D and E (D.P9, D.M4, E.P10, E.P11, E.P12, E.M5, DE.D3)

Example assessment strategies

This unit is internally assessed. There is a maximum number of three summative assignments forthis unit.

Learning aim A
It is suggested that learning aim A is assessed via a written report that demonstrates an understanding of each body system, their response to acute and chronic exercise, and the principles and applications of biomechanics in exercise. It should also include principles of biomechanics and kinesiology and how these principles are applied to participation in exercise.

Learning aims B and C requires video/audio evidence of learners carrying out the screening process for a client. This will be completed by demonstrating methods of forming positive working relationships with the individual. A written report will accompany this evidence, to provide an assessment of the client screening information and what lifestyle recommendations arise. The report will explore safe adherence to exercise and the benefits of physical activity and regular exercise for their health and wellbeing.
A written report covering health and safety in an exercise environment that also compares different types of exercise and the use of equipment for clients with different needs. Client programme cards and case studies for health and safety.
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Learning aim D and E can be assessed through a written report that reviews the exercise requirements and contraindications for specific populations.
Learners will also need to produce a plan for a gym-based induction and exercise session following the principles of training and using the range of cardiovascular equipment, resistance machines, free weight and body weight as outlined in the assessment guidance. They will then need to demonstrate how they instruct a client through their planned induction and gym-based exercise session. An observation record is available for tutors to use when observing the practical assessment to help ensure all key areas of the assessment process are met in the summative

assessment. These practical assessments will need to be recorded using audio visual equipment to demonstrate the learners instructing skills and their interaction with the client, evaluating each other's exercise plans so they can identify and evaluate strengths and weaknesses.This will enable them to explain whether exercises are appropriate for the group.

The leaner then needs to provide evidence of a review of their own and the clients performance.

Delivering the unit: suggested activities

This provides you with a starting place for one way of delivering the unit, based around the recommended assessment approach in the specification.

Digital solution available

Aligned directly to support this unit **Sport 2019+**

Unit C2: Fitness Skills Development	**Modules**	**Features**
	9 modules • 147 topics	Check your learning (formative assignment) End of module summary (reflection) End of module assessment (Summative style)

Learning aims / topic areas	**Suggested Activity**	**Suggested time allocation**
A1 Cardiorespiratory system	Learners watch a video clip on the structure of the heart (Heart song). Learners label the structures of the heart on an unlabelled diagram. Practical activity: cones are used to create the shape of the chambers of the heart. Blue bibs are used as deoxygenated blood and red bibs as oxygenated blood. Learners are given roles in the heart, e.g. semi-lunar values. Learners act as the blood to move through the cardiovascular system. Learners write down the pathway of blood through the heart. Tutor presentation on the main functions of the cardiorespiratory system. Learners research the structure and function of each type of blood vessel. Some key words will be provided, and learners must begin to select which of these terms are relevant to each	3

	blood vessel. Practical activity – learners to take their resting heart rate and compare it with the rest of the class. Tutors discusses normal ranges and what may affect the resting heart rate. Learners are put into groups of three to participate in two minutes of activity. They each do a different exercise: 1) step-ups, 2) wall sit and 3) plank. Learners discuss the physiological effects of exercise shown by each person in the group and who showed the most. Learners work in pairs to record each other's resting breathing rate. Tutor discusses the validity of the results and state normative data. Learners take part in two minutes of step-ups (or another similarly intense exercise), working as hard as they can. A partner should record their breathing rate as soon as they finish the exercise and then three minutes after. Tutor to discuss increase in breathing rate and recovery rate. Learners are given an unlabelled picture of the respiratory systems and asked to locate: lungs, bronchi, bronchioles, alveoli and diaphragm. Learners research the function of each structure and add a description to their labelled diagram using their own words. Learners correctly restructure the processes during both inspiration and expiration. This should be done in pairs via a card activity. Learners check their flow chart with the tutor and then record the correct process Whole-group activity: speed teaching – give small groups/pairs a content area and time to increase knowledge in the field. Groups rotate round to teach each other the content in the format of speed dating. Ask individuals to collate a workbook of content and score each other's teaching. Individual activity: mini quiz to check for learning.	

A2 Musculoskeletal system	Learners split into three teams and are given an equal number of bones on small stickers. Teams have to label each bone correctly in a set time on a live 'model'. This will then be compared to a skeleton model. Learners record correct answers on a blank diagram as responses are checked. Learners are in groups of three and are given a diagram of a synovial joint. They label the basic structures in the joint using labels given to them and then identify the function of each aspect of the joint. Tutor introduces the functions of the musculoskeletal system. Learners participate in a circuit session that includes the flowing exercises: front raise, bicep curl, tricep dip, bench press, pull up, oblique crunches, skater squats, lunges, squats, bridge with a single leg lift and heel raise. Following one full circuit, learners are given the names of the main muscles and asked to identify the main muscle working in each exercise. Learners record the correct responses. Learners are placed in mixed ability groups and provided with a picture of a sporting action. They use the diagram from the introductory activity to identify the main muscles working in the exercise and what their role is in the movement. Small-group activity: ask learners to produce a presentation with supplemented demonstrations to show the responses of the muscular system. Learners take part in different types of weight-bearing, resistance-based exercise and aerobic-based exercise and identify the type of each exercise. Small-group/whole-class activity: create four information packs, each representing a key adaptation.	3
A3 Energy systems	Introduce Topic with a group discussion about energy, ATP and its role in sport and exercise. Introducing the practical effects of this early can be very effective. A simple experiment using five balloons can demonstrate how energy is created and recreated (one balloon represents the adenosine molecule, with a further four balloons available to represent the role of phosphate molecules). Learner-led research for the ATP-PC system. On completion, use the 'snowball method',	3

	with learners feeding back first in pairs, then in small groups and finally as a class to discuss. Video clips can be a useful support to help learners with this topic. Formal delivery for the lactate system in exercise and sports performance, followed by pair work to create an information leaflet to be presented to the rest of the group and used as a revision aid. The aerobic system could be taught through formal delivery. Use videos to supplement understanding. Learners can work in groups to prepare a presentation on the adaptations of the energy systems. This can then be followed with a whole class debate, encompassing all aspects of ATP and the energy systems during sport and exercise performance.	
A4 Digestive system	Use a video of the digestive system to formally introduce learners to key processes and structures in the digestive system. Use a follow-up discussion to make sure that all learners agree on the definitions for the key words and understand the processes in the digestive system. Learners label a diagram of the digestive system and research the function of each part. Leaners are each given a macronutrient or a meal and carry out research to find out how long it takes to digest. Whole group feedback to compile an overview of timescales for digesting macronutrients and different macronutrients in a meal.	3
A5 Nervous system	Video clip of the all or none law of motor recruitment to show the principles of muscle contraction through neural input. Investigation into reaction times, reflex actions and exercises in the gym. Learners cantake part in simple reaction time tests like the ruler drop test. They can then discuss what these simple tests say about the human nervous system. • Learners should be made familiar with the CNS including major areas of the brain and theirfunction. They can then investigate voluntary and involuntary	3

	activities and relate these to movement in the gym. • If possible, learners could use microscopes to look at nerve cells and nerves. This activity canthen be linked to the structure of nerve cells and the conduction of impulses. Paired research into the nervous system response to exercise and learners are given a specific population to research how the nervous system may differ – eg older populations, children, people with disabilities related to the nervous system.	
A6 Principles of biomechanics in exercise	Overview of planes of movement and learners take part in activities and have to work out which plane of movement the activity is taking place in. Learners are given anatomical terms and the definitions of each; they then have to describe body parts using these terms. Tutor presentation on biomechanical efficiency, muscle attachments and levers.	3
B1 Forming working relationships with clients	Learners carry out research into their local area to find out about what types of health and fitness facility are available and how they cater to different types of customers. Where possible, learners could design and give out questionnaires to find out what people in the local area are looking for in relation to health and fitness provision. Learners then prepare and deliver a presentation to share their findings with the rest of the class. Learners write a review to assess the provision of health and fitness for people in the local area and if there are any types of customers that are not fully catered for in the local area Learners create a mind map of all the customer service skills they can think of. They could then use these ideas to highlight positive and negative experiences of the different types of customer service. Learners are given a role-play scenario that actively shows a client's path through the fitness facility. Learners could identify opportunities for customer service skills and practise basic use of their current skills. Learners complete work experience in a fitness facility for a set amount of time. They could be based in a customer-facing role, so they have the opportunity to interact with them. In a classroom environment, they are given scenarios that they have to respond to.	8

	The scenarios could include conflict management, how to develop rapport with clients, when and when not to engage with clients. Following this session, learners could complete more work experience to practise the skills they have discussed.	
B2 Client screening processes	Learners should be introduced to the client consultation process. The assessor could lead a session focused upon the different elements of the consultation, introducing the learner to the different documents. Learners could then pair up and take it in turns to carry out a PAR-Q, a medical history questionnaire and a lifestyle questionnaire. The learner should be aware of the whole process, the different methods to carrying this out and the best way in which to complete this. Learners are shown how to carry out the health assessments and fitness tests to include: • blood pressure • resting heart rate • BMI • waist circumference • sub-maximal cardiorespiratory fitness • muscular strength • muscular endurance. The tutor demonstrates and administers the tests to start with and then learners work in pairs over a number of lessons to learn how to administer and record the data from the test as well as interpret the results. Learners practise feeding back the data to their clients in a manner that is sensitive and appropriate to develop customer service skills when feeding back sensitive information. Learners are given case studies of different types of clients with different health assessment and fitness assessment data. Learners have to interpret the results and simulate a feedback session with a partner to provide this feedback. The case studies should include variation in data that is deemed healthy and unhealthy to provide learners with experience of feeding back information that may be unwelcome to a client so that they can develop appropriate terminology and supportive communication to provide this feedback. Learners could attend a gym and undergo an induction. They could take notes on an effective induction process and come up with their own process. They could then lead a gym induction to other learners in order to develop their practice as a gym/fitness instructor.	15

	Tutor presentation on risk stratification and what it means for self, organisation and the client. Learners work in pairs to research recognised tools for risk stratification including: • Irwin and Morgan traffic light system • other national/international evidence-based tools • national/agreed protocols/referral/care pathways and explore how each are used. Learners then feedback to the rest of the class Learners identify the different reasons for deferral of exercise (including issues highlighted in the client consultation as well as temporary/immediate deferral situations). Alternatively, the tutor could prepare simulated situations that include issues that would result in the deferment of exercise, these can be given out at random. Learners must explore what steps would need to be taken for each situation highlighted, including the most appropriate person to refer the client to, and likely outcomes.	
B3 Benefits of physical activity	Learners carry out research into the benefits to society of taking part in sport and physical activity. Particular groups in society are then given to each group, e.g. older people, teenagers, unemployed people – learners then prepare a presentation as to why regular participation in sport and physical activity for that particular group is beneficial for their social wellbeing.	5
B4 Methods to improve client participation in regular exercise	Guest presentation from fitness professionals to discuss methods they use to improve client participation in regular exercise for different types and groups of people. Paired group work to research methods to improve client participation for a given client. Feedback to the rest of the group via a presentation.	3
C1 Health and safety in an exercise environment	Learners visit a local health and fitness centre and are shown around and given a talk on the organisations, health and safety related policies and procedures including risk assessment and reporting routine maintenance emergency action plans, COSHH, manual handling, electrical safety. Learners can ask questions and view organisational procedures	10

	where possible to get a better idea of how they are used in the workplace. Learners talk to staff at the centre to find out how the procedures are implemented for their roles Learners are given a practical walkthrough of how to complete cleaning and maintenance in their fitness facility. The walkthrough could give learners the opportunity to try the cleaning activities and use appropriate cleaning products. During the walk through the assessor could discuss the importance of safe operating procedures and how to stay safe when conducting the activities. Learners are then given the opportunity to practise the cleaning activities and the assessor could provide formative feedback on the success of the cleaning activities.	
C2 Types of exercise and exercise equipment	To introduce this unit effectively, learners could visit a local gym where they could experience first-hand an initial session from a qualified gym/fitness instructor. This could be followed by a question and answer session between the instructor and learners to answer any questions that they may have at this stage. Learners take part in a guest lecture from a fitness professional in a local gym. This will give learners the opportunity to understand the most current gym instruction being delivered in the sector and the impact the classes have on participants. The guest lecture should also be followed by a focus group in which learners should prepare questions that they can ask the fitness professional. Learners should have access to the full range of fixed resistance exercise equipment in the unit content and be shown how to use it. They should then perform sets and reps of that exercise to gain experience of how the exercise feels and how to change the weights or reps and sets to increase strength or muscular endurance. The training methods for resistance exercise can also be practically applied so that learners know the differences and benefits of each type in developing along the MSE (Muscular Strength and Endurance) continuum. • Learners can then instruct a peer how to use the equipment safely, taking into account the correct positioning and weights for that	30

	person and experiment with the methods of resistance exercise. • Learners can take part in a full class session where each free weight exercise is demonstrated and key teaching points are provided, along with the primary and secondary muscle groups involved. Having a visual muscle chart available supports this learning. Learners then need to teach each other in a one-to-one situation each of the free weight exercises, providing accurate demonstrations and appropriate teaching points and demonstrating effective spotting technique. • Learners can take part in a full class session where each bodyweight exercise is demonstrated, and key teaching points are provided. Learners then need to teach a small group one of the bodyweight exercises, providing accurate demonstrations and appropriate teaching points. This would be a suitable time to utilise the flexibility exercises. Alternative and adapted exercises for each type of exercise should be discussed in a combination of theory and practical sessions so that learners can experience the adapted exercise and know how to demonstrate it accurately in	
C3 Principles of training	Tutor-led presentation and discussion on FITT principles and other principles of training listed in the specification. Learners review training plans to see how the FITT principles are incorporated into a training programme. For cardiovascular, resistance, power, flexibility and functional training, learners take part in the training methods using appropriate gym equipment and review what the training method entailed and how it trained that component of fitness. Learners devise training plans based on the principles of training and the training methods for different types of clients provided as case studies by the tutor. Learners work in pairs and work out a fitness training programme for each other. They discuss the programmes that they have created for each other, discussing their reasons for planning the programme in the way that they have. They discuss and come up with possible alternative exercises that may be used if needed to keep the gym-	10

	based exercise programme effective and to ensure it would meet the client's goals.	
D1 Antenatal women D2 Postnatal women D3 The older adult D4 Adolescents D5 People with disabilities	Tutor-led whole-class discussion on what contraindications are and the difference between absolute and relative. Discussion on circumstances in which referral to a doctor or other health professional may be required and reasons for temporary deferral of exercise. The five specific populations can be divided amongst learners: • antenatal women • postnatal women • the older adult • adolescents • people with disabilities. • In small groups, they utilise independent research and tutor support to plan and deliver a presentation. The format of the presentation is decided and agreed upon by learners and needsto include the following five sections: ○ introduction to the group (i.e. types, definitions, functional status) ○ changes to body systems ○ contraindications ○ symptoms to identify if exercise needs to be stopped ○ exercise requirements. • Learners use the presentations as an opportunity to make their own notes, however, the materials used can be copied and shared with all. • Learner understanding of contraindications for exercise can be checked by using a formative assessment activity. This could be carried out as a role play where the learnertakes on the role of the fitness instructor and explains to the client what their contraindication means in terms of exercise adaptions.	15

	Observe their role play and check that learners understand how to produce a safe exerciseprescription plan by evaluating a client's circumstances and adapting each exercise as appropriate.	
E1 Planning and instructing a gym-based induction	Learners work in pairs to produce a gym based induction plan. The plan should include the following: Welcome clients, advise clients of the facilities, equipment, emergency procedures. Facility walk through Check client's ability and any medical conditions Warm up clients. Introduce equipment – physical and technical demands of each exercise and the purpose. Demonstrations How to Select appropriate intensity for client to use the equipment How to adapt the intensity to suit client's needs. Teaching points for each piece of equipment Cool down.	15
E2 Planning a gym-based exercise session	The assessor could arrange for a visitor to talk to the learners about how to plan and prepare and suitable and effective gym-based exercise programme. They could focus on the information that is gathered in order to provide clear information and client goals. Learners can work in pairs to produce a gym-based exercise session plan for a specific client and ensure they include the following: appropriate exercises are identified appropriate sequences of exercises appropriate timings of each exercise selection of the correct equipment for the programme adapting a gym-based exercise programme to ensure appropriate progression and/or	20

	regression muscle balance. Components of a gym-based exercise session: warm-up – pulse raiser, dynamic and static stretches main component – cardiovascular endurance, muscular strength or muscular endurance cool down – flexibility, developmental stretching length of time for each component times for each component that are appropriate for their given client. Learners present their plan to the rest of the class to show they have customised it to the needs of the client that they have been given.	
E3 Instructing a gym-based exercise session	Learners will need to be able to practically deliver their planned gym-based exercise programme. Initially, they could work with a partner who is also on the course with them and then work with someone that is not familiar with them in preparation for their summative assessment. Learners will need to demonstrate all activities that they have included to ensure that the client is fully aware of the expectations and activities that are incorporated. The assessor will need to spend time observing and supporting learners to provide mentorship in their progress and to provide them with key targets to help them develop and improve as a gym/fitness instructor.	20
E4 Reviewing own performance in providing gym-based exercise E5 Reviewing client's performance	Learners could be shown a range of feedback methods and then discuss how to best collate feedback. This should include how to identify the learners' relationship with the client, the success of the session and any areas to improve on when delivering the session The tutor could develop learners' ability to evaluate effectively by delivering a classroom-based session focused on effective evaluation. They share good practice in effective evaluation and provide learners with visuals of what a good evaluation may	10

	look like. Learners explore the difference between evaluating their own performances and the performances of their clients. They consider what different aspects should be taken into consideration when carrying out this process and how they could evaluate themselves and their clients. Learners attempt to review and evaluate both their own and the client's performances. They clearly differentiate between their own and their client's evaluations and show, through their work, what the differences are in providing effective feedback to their clients and themselves. A class discussion to consider the value of reviewing exercise sessions is beneficial. This should include improving personal skills, the quality of the exercise session and the different ways to improve the delivery of the exercise session. This will involve the appropriateness of the activities, time allocated to activities, leadership styles and enjoyment. This could develop into how to use the review process well in their career development.	

Details of links to other BTEC units and qualifications

Several other units from this qualification complement this unit. These include:

- Unit A: Careers in the Sport and Active Leisure Industry
- Unit B: Health, Wellbeing and Sport
- Unit D2: Personal Trainer Skills Development
- Unit 4: Nutrition for Physical Performance
- Unit 6: Sporting Injuries
- Unit 8: Fitness Testing
- Unit 9: Fitness Training
- Unit 13: Influence of Technology in Sport and Physical Activity.

Resources

For this unit, learners must have access to:

- gym equipment, to include cardiovascular machines, free weights and fixed weights
- recording equipment, such as a video camera, a tablet, a voice recorder
- a range of field fitness testing and health screening equipment
- normative data for interpretation of test results

Social Media

@AnatomyOfFit

@OnlineAandP

@FitnessMagazine

@uk_fitpros

@Fiton_app

@thebodycoach

Websites

https://www.cimspa.co.uk/ - The Chartered Institute for the Management of Sport and Physical Activity (CIMSPA) is the sector's professional body

https://www.ptdirect.com/training-design/anatomy-and-physiology - A range of anatomy and physiology based information and articles for fitness instructors

https://www.academyoffitnessprofessionals.com/personal-trainer-factsheets/ - factsheets linked to personal training https://www.getbodysmart.com/ - annotated diagrams of the main body systems

https://www.fit4training.com/single-post/2017/04/11/anatomy-physiology-revisiononline-resources-fit4training - a list of useful anatomy and physiology websites and resources to support fitness professionals

https://www.bbc.co.uk/bitesize/guides/zy62hv4/revision/2 - overview of the impact of demographics on physical activity participation

https://www.clubindustry.com/step-by-step/ten-commandments-exceptional-

customerservice-fitness-industry - key features of excellent customer service in a fitness environment https://www.gymmaster.com/customer-service-importance/ - how to provide great customer service in the gym

https://cpdonline.co.uk/knowledge-base/health-and-safety/health-and-safety-guidancefor-gym-staff/ - Health and safety guidance for gym staff

https://www.healthline.com/health/coronary-artery-disease/risk-factors - Risk factors for Coronary Artery Disease

https://www.cntw.nhs.uk/content/uploads/2017/12/HS-PGN-14-App9-Irwin-MorganRiskStratTool-V02-Iss-2-Oct-19.pdf - Irwin and Morgan risk stratification table

https://www.acsm.org/blog-detail/acsm-certified-blog/2019/11/11/acsm-riskstratification-chart-download - Downloadable chart that shows a risk stratification process to follow

https://fitlegally.com/10-ethical-guidelines-fitness-professionals/ - Ethical guidelines for fitness professionals

Textbooks

Adams GM, *Exercise Physiology Laboratory Manual: Health and Human Performance* (Fourth Edition),McGraw Hill Higher Education, 2001 ISBN 9780072489125

Allen MB, *Sports Exercise and Fitness: A Guide to Reference and Information Sources*, Libraries UnlimitedInc, 2005 ISBN 9781563088193

American College of Sports Medicine, *ACSM's Guidelines for Exercise Testing and Prescription* (SeventhEdition), Lippincott Williams and Wilkins, 2005 ISBN 9780781745901

American College of Sports Medicine, *ACSM's Health-Related Physical Fitness Assessment Manual*
(Second Edition), Lippincott Williams and Wilkins, 2007 ISBN 9780781775496

Coulson M, *The Fitness Instructor's Handbook: A Complete Guide to Health and Fitness (Fitness Professionals)* (Second Revised Edition), A&C Black, 2007 ISBN 9781408178263

Franks BD and Howley ET, *Fitness Leader's Handbook* (Second Edition), Human Kinetics Europe, 1998ISBN 9780880116541

Hazeldine R, *Fitness for Sport*, The Crowood Press, 2000 ISBN 9781861263360

Heyward VH, *Advanced Fitness Assessment and Exercise Prescription* (Fifth Edition), Human Kinetics,2006 ISBN 9780736057325

Howley ET and Franks BD, *Health Fitness Instructor's Handbook* (Fourth Edition), Human KineticsEurope, 2003 ISBN 9780736042109

Maud PJ and Foster C, *Physiological Assessment of Human Fitness* (Second Edition), Human KineticsEurope, 2005 ISBN 9780736046336

Powers SK and Howley ET, *Exercise Physiology: Theory and Application to Fitness and Performance* (SixthEdition), McGraw Hill Higher Education, 2006 ISBN 9780071107266

Sharkey BJ, *Physiology of Fitness* (Third Edition), Human Kinetics, 1990 ISBN 9780873222679

Sharkey BJ and Gaskill SE, *Fitness and Health* (Sixth Edition), Human Kinetics, 2006 ISBN 9780736056144

Skinner J, *Exercise Testing and Exercise Prescription for Special Cases: Theoretical and Clinical Applications* (Third Edition), Lippincott Williams and Wilkins, 2005 ISBN 9780781741132Stafford-Brown J and Rea S*, BTEC National for Sport and Exercise Sciences* (Third Edition), Hodder Education 010 ISBN 9781444111989
Watson AWS, Physical Fitness and Athletic *Performance: A Guide for Students, Athletes and Coaches* (Second Edition), Longman, 1996 ISBN 9780582091108

Definition of key terms

Absolute contraindications to exercise
This term refers to specific health conditions, with which a person should not undertake exercise. These include myocardial infarction or electrocardiography changes, complete heart block, acute congestive heart failure, unstable angina, and uncontrolled hypertension. An instructor should be made aware of any of these conditions using preexercise health screening and must refer the participant to a doctor or similar, relevant professional before any exercise is undertaken

CPD
CPD stands for Continued Professional Development and refers to the process of taking positive action to enhance and develop professional understanding, skills, and abilities. CPD can take many different forms: qualifications, workshops, conferences, e-learning programmes, reading professional literature, watching more experienced colleagues etc.

Customer service
Refers to a series of activities, all designed to offer the customer the best possible experience of a product or service, to meet or exceed their expectations. Successful customer service can enhance reputation and customer loyalty, whilst poor customer service can do the opposite. Customer service can include face to face interaction, as well as phone, email, social media etc.

Health screening
All exercise instructors must take reasonable steps to safeguard their participants. This means that, as well as ensuring the working area and equipment are safe and in good working order, they must also establish that those wishing to take part are not physically at risk from doing so. Health screening is the term given to the steps an instructor will take to discover if a participant has any underlying health conditions that could be triggered or exacerbated by physical activity. They may include formal checks such as taking blood pressure, medical history etc. and/or asking questions (has anyone got any injuries?) before the session starts, enabling them to defer, refer or adapt the planned activity to optimise participant safety.

Modelling
Modelling simply refers to the instructor or another participant demonstrating the exercise or activity to be performed. Many people learn best by seeing the exercise as well as hearing about it, so supporting a verbal description with a visual model will better ensure all participants understand what is required. Modelling also allows common mistakes or misconceptions to be highlighted, with suggestions and visual cues as to how to avoid or correct them, increasing safety and effectiveness.

Mirroring
Like modelling, mirroring refers to demonstrating the exercise or action to be carried out, however, as the word suggests, the action is done by the instructor as a mirror of the participants. Often used in classes where the instructor is at the front, facing participants (e.g., group exercise to music), movements must be made as a mirror image for the group to follow. For example, when the group need to move to the right, the instructor will go to the left, so that everyone moves the 'same way' or if the group need to move forwards, the instructor will move backwards so that they are again going the 'same way' as their participants

National recommended guidelines for physical activity and health
The UK's Chief Medical Officers publish guidelines outlining the amount of physical activity different population groups should do each day to maintain health. They split the population into birth to 5yrs, 5 – 18yrs, adults over 19, disabled adults and pregnant and postnatal women. This information can be used by the public to help guide their physical activity and is also used by policymakers, health professionals and others working in the sports and active leisure industry.

Operating procedures
These are the documented processes that an organisation has in place to ensure that services are delivered effectively and consistently every time by everybody. Operating procedures are often written as a step-by-step series of instructions that employees can follow to accomplish a given task, ensuring the company and industry standards are met.

Risk management
Is the process of identifying potential risks, analysing them, and taking steps to manage or mitigate them. Within a fitness environment risks may be posed by the environment (e.g., slip or trip hazards), equipment (e.g., working order, unsafe practice), customer behaviour (e.g., poor form, contraindications), instructor behaviour (inappropriate planning or supervision) or business and/or reputational factors such as mishandling client data, financial etc.

Risk stratification
Refers to the process undertaken by a fitness facility or professional, before, during and after a client undertakes any type of formal activity, to ensure any risks are identified and mitigated. There are recognised processes (often known as risk stratification models) which outline a process that can be followed, or an individual/organisation can create their own. Often written as a flow chart, series of questions to answer or steps to follow, risk stratification models will provide a coherent approach that helps fitness professionals to ensure their clients' safety at all times

Scope of own practice
Gym-based exercise instructors must always work within the scope of their own practice. This means that they must always be appropriately qualified in terms of the advice they offer, activities they instruct, clients they work with and environments in which they work. An instructor without appropriate nutrition-based qualifications should not be offering their services as a dietitian or nutritionist, for example.