Specification

IAO Level 3 Diploma for The Gym Instructing and Personal Training Practitioner

Qualification Number: 603/6001/X

CIMSPA® Endorsed | Professional Standards

Innovate Awarding is an Ofqual regulated awarding organisation with an innovative and dynamic approach. We develop off-the-shelf, customised and fully bespoke qualifications across a growing number of sectors – all on the Regulated Qualifications Framework (RQF).

Our portfolio is always growing, and we currently have qualifications in the following sectors:

Active Leisure	**Health and Social Care**
Business and Management	**Hospitality and Catering**
Childcare	**IT**
Employability	**Logistics**
Retail	**Education and Training**

We currently offer over 120 qualifications and we're continuously developing and diversifying our portfolio. Please visit our website regularly to keep up to date www.innovateawarding.org

This document will be updated if there are any changes, so it is important to make sure you are working from the most up-to-date version, which is available to download from our website.

This specification also provides details on administration, quality assurance policies and the requirements as well as responsibilities that are associated with the delivery of vocational qualifications.

Innovate Awarding is recognised as an awarding organisation by the following qualifications regulators – Ofqual (England) and the Welsh Government (in Wales).

If you have any questions regarding qualifications in general, aspects of specific qualifications or our quality assurance policies and procedures, visit our website where a lot more information is available.

If you cannot find what you are looking for on our website, please call or email our customer support team:

Telephone: 0117 314 2800
Email: contactus@innovateawarding.org

"We work with a wide variety of organisations such as employers, training providers, FE colleges and Sector Skills Councils and develop off-the-shelf, customised and bespoke qualifications."

Qualification summary

Qualification Accreditation Number(QAN)	603/6001/X
Qualification review date	30th June 2026
Guided Learning Hours(GLH)	Minimum 396 hours
Total Qualification Time(TQT)	620 hours
RQF level	Level 3
Qualification credit value	62 credits
Minimum credits at/above level	42 credits
Assessment requirements	Portfolio of Evidence, Multiple Choice Examination The units "A/617/1178 Anatomy and Physiology for Exercise" and "Y/617/1186 Applied Anatomy and Physiology" are assessed by externally assessed Multiple Choice Question (MCQ) examination. Centres will find documentation on how to deliver MCQ examinations on the QuartzWeb portal. The MCQ tests consist of 40 questions. The learner must achieve a score of 24/40 to achieve a pass. This equates to 60%. The learner will have 60 minutes to complete the test. Remaining units are internally assessed and internally quality assured by Centre staff and externally quality assured by Innovate Awarding External Quality Advisors (EQAs).
Aims and objectives ofthe qualification	The objective of this qualification is to provide learners with the skills and knowledge to engage, facilitate, educate and support clients in the gym environment. This qualification further develops learners' knowledge and skills to pursue a career as a personal trainer. Focusing on key areas such as: coaching clients towards their health and fitness goals through the planning and delivery of creative and personalised exercise programmes and instruction, nutritional advice and overall lifestyle management.

Entry guidance	This qualification is suitable for those who work or wish to work within the active leisure sector. Some experience of gym-based exercises would be beneficial.
Progression opportunities	This RQF qualification is designed for individuals aged 16 over who want to complete an industry-recognised qualification and pursue a career within the sector. This qualification outlines the role and scope of a Personal Trainer and the essential knowledge and skills that are needed to meet the requirements of a Practitioner membership with CIMSPA. Learners who achieve this qualification could progress into employment as a personal trainer either on a self-employed basis or within a gym or leisure organisation. On completion of this qualifications, learners can develop their knowledge and skills further with additional qualifications.
Professional recognition	The agreed industry prerequisite to become a Personal Trainer is to have achieved a CIMSPA endorsed educational product that meetsthe requirements for a Practitioner membership of CIMSPA. This qualification combines the Level 2 Gym Instructor and the Level 3 Personal Trainer standards and so the required prerequisite will be fulfilled upon completing this qualification. On completion of this qualification, learners will also meet the requirements of CIMSPA's professional standard for Safeguarding Adults and Adults at Risk (category 2) applicable to Personal Trainers and Gym Instructors.
Funding	For details on eligibility for government funding please refer to the following websites: http://www.education.gov.uk/section96 https://www.gov.uk/government/organisations/skills-funding-agency

Innovate Awarding

When you work with Innovate Awarding, you're working with an awarding organisation that sets itself apart – a dynamic company with a collaborative approach to doing business. We're consultative and innovative…everything that our customers say they want an awarding organisation to be.

We're easy to work with, committed and passionate about exceeding our customers' expectations. We're not tied down by bureaucracy and red tape and can think outside the box and respond quickly to our customers' needs.

We have a Performance Pledge that details guaranteed response times. Copies of these can be found on our website www.innovateawarding.org

Feedback

Your feedback is very important to us. We're always open to suggestions when it comes to enhancing and improving our services, products and systems. Email us at contactus@innovateawarding.org or call us on 0117 314 2800.

Complaints

If we do get things wrong, we'll make every effort to resolve your issues quickly and efficiently. If you'd like to raise a formal complaint then we recommend you read our Complaints Procedure which can be found on our website.

Fees

Our fee's structure is transparent and straightforward. Our fees are published on our website in a clear format with no hidden charges. Unlike other awarding organisations, we do not charge an annual centre fee. Visit our website to compare our fees.

Enquiries and Appeals

We recognise that sometimes decisions are made that a centre (or learner) may wish to appeal. We have an Enquiries and Appeals Policy and Process on our website that sets out guidelines on grounds for appeal and the process.

Data Protection

Innovate Awarding takes the protection of data seriously; we have a data protection statement outlining how we and our centres, comply with the current legislation on data protection. This statement can be found on our website.

Equality and Diversity

Innovate Awarding is committed to giving everyone who wants to gain one of our qualifications an equal opportunity of achieving it in line with current UK legislation (Equality Act 2010) and EU directives.

Centres are required, as conditions of approval, to use an equality and diversity policy that works together with ours and that they maintain an effective complaint and appeals process. We expect centres to tell learners how to find and use their own equality and diversity and appeals processes. For information, please visit our website.

Reasonable Adjustment and Special Consideration

All learners must be treated fairly and equally and be given every opportunity to achieve our/the qualifications. A copy of our policy on Reasonable Adjustments and Special Considerations, and application form, can be found on our website.

Malpractice and Maladministration

Innovate Awarding has a responsibility to do everything it can to prevent any malpractice or maladministration from occurring, and where it has already occurred, ensuring action is taken proportionate to the gravity and scope of the occurrence.

A copy of our policy and procedure on Malpractice and Maladministration is available on our website.

Recognition of Prior Learning (RPL)

RPL recognises how the contribution of a learner's previous experience could contribute to a qualification or unit. Innovate Awarding have produced guidance on RPL and this can be found within our Information and Guidance for Centres on our website.

Please note the above is not a comprehensive guide to running IAO qualifications. Onceapproved centres must adhere to the Centre Agreement and Information and Guidancefor Centres.

The Regulated Qualifications Framework (RQF)

What is the RQF?

The Regulated Qualifications Framework (RQF) is an Ofqual regulated system of cataloguing qualifications. Qualifications on the RQF can be found by their size or level. Qualifications at a given level can differ depending on their content and purpose.

All of Innovate Awarding's qualifications are on the RQF.

Qualification Level

The level reflects the challenge or difficulty of the qualification. There are eight levels of qualification from 1 to 8, supported by three "Entry" levels.

Qualification Size

The size of a qualification reflects the estimated total amount of time it would take the average learner to study and be assessed. The size of a qualification is expressed in terms of Total Qualification Time (TQT). The time spent being taught or supervised, rather than studying alone, is the Guided Learning Hours (GLH).

Qualifications can sit at different levels but require similar amounts of study and assessment. Similarly, qualifications at the same level can take different amounts of time to complete.

Assessment Strategy

This qualification has been developed in line with CIMSPA's Professional Standards (https://www.cimspa.co.uk/standards-home/professional-standards-library) and covers theknowledge, skills and behaviours contained therein to confer occupational competence to the learner upon successful completion.

The qualification comprises both internal and external assessment as outlined in the table below. Internal assessment should be portfolio based and include practical observation records alongside other methods such as (not exhaustive) workbooks, case studies, professional discussions, witness statements and consultation documents.

Unit title	Level	Assessment
A/617/1178 Anatomy and Physiology for Exercise	2	External: Multiple Choice Question Examination (MCQ)
F/617/1179 Maximising the Customer Experience in the Exercise Environment	2	Internally assessed
T/617/1180 Client Consultation and Lifestyle Management	2	Internally assessed
A/617/1181 Planning and Delivering Gym-Based Exercise Programmes	2	Internally assessed
F/617/1182 Cleaning and Maintenance within a Gym Environment	2	Internally assessed
Y/617/1186 Applied Anatomy and Physiology	3	External: Multiple Choice Question Examination (MCQ)
D/617/1187 Lifestyle Management and Motivation for Personal Training	3	Internally assessed
K/617/1189 Consultation, Assessment and Programme Design for Personal Training	3	Internally assessed
D/617/1190 Planning and Delivering Personal Training Programmes	3	Internally assessed
M/617/1193 Nutrition for Physical Activity	3	Internally assessed
T/617/1194 Business Acumen for Personal Trainers	3	Internally assessed
Y/618/1894 Safeguarding adults and adults at risk in a fitness environment	3	Internally assessed

Planning and delivery guidance

This section of the assessment strategy contains content and guidance for the delivery of this qualification.

Training providers must take steps to ensure their curriculum plans reflect the coverage of Innovate Awarding's syllabus in full, and that they have implemented strategies to ensure their learners have acquired the knowledge, skills and behaviours across the whole qualification, to the standard described, prior to assessment. Innovate Awarding's External Quality Assurance team will undertake verification activities to ensure that these requirements have been met.

The qualification covers the requirements for both Gym Instructing and Personal Training to support integrated delivery.

For the role of Personal Trainer sufficient time between engaging a client and final assessment needs to be allowed to show improvements in the client's lifestyle, health, and fitness. Learners must provide evidence that they have planned a progressive programme for a client ensuring effective integration of all exercises and physical activities to allow clients to achieve short, medium- and long-term goals. For example, to cover a 12-week period of delivery with evidence of a minimum of six sessions of 30 minutes duration.

Learners should demonstrate their ability to review client progress and make any necessary adaptations to the programme where goals are not being achieved or new goals are identified.

The role of Gym Instructor requires sufficient time between engaging a client and final assessment needs to be allowed to show improvements in the client's lifestyle, health, and fitness.

There must be evidence that the learner has planned a gym-based programme over a period, for example a six-week programme, by applying the principles and variables of fitness to a range of activities to meet identified client goals and/or to achieve general fitnessand health gains. This may be integrated into the delivery and assessment requirements for the Personal Trainer. Providers should ensure that learners are supported to engage participants and plan delivery to cover the full requirements of both roles as outlined within this specification.

Delivery of Y/618/1894 Safeguarding adults and adults at risk in a fitness environment must be face to face although that is not to say that the tutor must be physically present with learners. Technology may be used in the delivery of this unit, but this must be "live" i.e. through live webinars or one to ones led by their tutor.

Assessment requirements

This section of the assessment strategy explains what must be covered within the learner's final submitted evidence. All elements should be scheduled to occur when the learner has reached the required standard to maximise their chances of a successful outcome and reflect their achievement. All work must be the learner's own and evidence authenticity.

Learners who do not meet the required standard for assessment should be allowed to retake their assessments and provided with feedback and further learning to support subsequent attempts**.** Further information on retakes for externally assessed is available in Innovate Awarding's Retakes and Resits policy.

Theory-based elements

Learners must provide evidence that they have the knowledge and understanding specified by the theory-based elements of the specification.

This evidence may be in the form of the following examples:

- Written workbooks
- Digital voice recording (DVR)
- Viva/professional discussion/question and answer
- Exam (MCQ)
- Case studies
- Filmed presentation

The method/s that are selected must be appropriate for the criteria being assessed and meet learner needs.

Workbooks must include questions that are written in such a way as to make clear to learners and assessors the length and breadth of answer required, based on the wording of the assessment criteria. This may be though the use of verb descriptors (i.e. if the assessment criteria asks for an 'explanation' the question asked must make clear that an explanation is the minimum expected requirement), or by ascribing number of marks to eachquestion.

Viva/professional discussion/question and answer must still produce evidence that can be submitted for IQA and EQA. This evidence may be DVR, filmed or a written transcript. A tick sheet will not be sufficient as evidence that the learner has met the assessment criteria requirements.

It may be possible that some assessment criteria and/or specific units can be assessed by means of a long or short answer test or Multiple-Choice Questions. This approach must be

created in conjunction with Innovate Awarding Organisation and approved by them before use. Further guidance is available to centres who wish to devise these types of assessments internally. Training Providers should note that these will not be permitted as an alternative to Innovate Awarding's external assessments. Mock assessments for these components will be available to help learners prepare.

Competence-based assessments

Assessment decisions for competence-based elements must be made by an occupationally competent assessor who meets the qualification requirements outlined in the next section of this document. Practical assessment must be conducted where practicably possible in a real-world environment ideally, 'on the job'/at work. This could include; a gym, studio, sports hall, outdoors, client's home or other confined space. Where possible practical observations should be conducted with 'real clients'.

Competence based assessments must include:

- Client programme and observation
- Relevant screening and baseline tests

Some competence-based assessment criteria will generate written evidence and may be included within the learner's portfolio, for example:

- programme and session plans
- health and fitness testing results
- evaluations

These will be submitted as evidence for assessment and must be available for IQA and EQA as requested.

Other elements of learning will produce practically-based evidence and may be included within the learner's portfolio, for example:

- customer service
- professional conduct
- cleaning and maintenance
- client consultation
- session delivery

Practical evidence may take the form of:

- filmed evidence
- DVR
- witness testimony
- confirmation of achievement

Use of filmed evidence or DVRs

Any filmed evidence requires the learner to introduce themselves on camera at the start of the clip, as well as give the date of recording. Footage must have reasonable sound and picture quality to enable others (assessor, IQA, EQA) to see and hear what is taking place. The footage produced must provide evidence of the achievement of identified assessment criteria and an accompanying reference sheet may need to be provided.

A DVR made by the assessor, or a witness can be submitted as evidence. Their spoken commentary must include the name of the learner and date of recording, be of reasonable sound quality and only reference relevant criteria. Commentary should not be a verbal narrative of everything the learner does if aspects included are not required by assessment criteria (e.g. do not include descriptions of the learner's every move if these elements are not in the specification as required as evidence).

It may be necessary to produce a reference sheet to accompany the DVR for ease of assessing and quality assuring.

Witness Testimony

Witness testimony must be provided by an appropriately qualified and experienced professional. Evidence of their level of qualification and experience should be available to Innovate Awarding on request. Their written testimony must be personalised to the learner and should include a brief description of what was seen and/or heard that proves the learner met the identified assessment criteria.

The testimony provided by a witness will provide evidence against which the assessor will make their assessment decision. If insufficient evidence is produced by the witness, it may not be possible for the assessor to make a valid and reliable assessment decision.

Simulation

Simulation may only be used as an assessment method where it is impractical to collect evidence in the workplace within an acceptable time frame, or within exceptional circumstances. These circumstances are restricted to situations where evidence cannot be generated through normal work activity and does not present naturally such as dealing with an emergency situation.

Should simulation be used it must be undertaken in a Realistic Working Environment (RWE). A RWE must "provide an environment that replicates the key characteristics of the workplace in which the skill to be assessed is normally employed". The conditions of assessment must be the same as those found in the normal working environment, with similar demands, pressures and requirements.

Should simulation be used as an assessment method, the Centre concerned must seek, prior

to its use, advice from the external verifier of the relevant awarding organisation regarding the validity of the method.

Holistic assessment

Innovate Awarding encourage centres to take a holistic approach to assessment where possible. A holistic approach to assessment is one that:

- acknowledges that there is some element of repetition and overlap between units
- serves to reduce burden on learners and assessors by 'grouping' like assessment criteria together
- allows for assessment and evidence gathering across units in a 'horizontal' fashion rather than keeping assessment in a per-unit 'vertical' format
- enables a single piece of evidence to be submitted to meet multiple assessment criteria (sometimes from different units) in the one document or assessment method
- is led by the means of assessing, producing and documenting evidence rather than being driven by the content and format of each unit
- may adopt a 'project-based approach' which enables learners to complete a set sequence of events (e.g. carry out client consultation, plan sessions, deliver sessions, show appropriate delivery techniques, review session) in an appropriate order, whilst producing and gathering evidence to be assessed, rather than workingthrough units individually

Occupational competence requirements

Tutors, Assessors and Quality Assurance Staff

Required Criteria

All Tutors, Assessors and Quality Assurance Staff must:

- Possess a Fitness or Gym Instructing and/or Personal Training specific qualification equivalent to the qualification or units being taught / assessed or quality assured
- Have relevant industry experience
- Have knowledge of and a commitment to the Exercise and Fitness Code of Ethical Practice
- Demonstrate active involvement in a process of industry relevant Continued Professional Development during the last two years (this may be discipline/ context specific or relevant to tutoring assessing or quality assurance)

Tutors

Tutors must hold or be working towards a teaching qualification.

The following are acceptable:

- Level 3 Award, Level 4 Certificate or Level 5 in Education and Training
- Level 3 Award in Preparing to Teach in the Lifelong Learning Sector (PTTLS)
- Level 4 Award in Preparing to Teach in the Lifelong Learning Sector (PTTLS)
- Level 4 Certificate in Teaching in the Lifelong Learning Sector (CTTLS)
- Level 5 Diploma in Teaching in the Lifelong Learning Sector (DTTLS)

Relevant predecessor NQF tutor qualifications

Assessors

Assessors must hold or be working towards any of the following:

- Level 3 Award in Assessing Vocationally Related Achievement
- Level 3 Award in Assessing Competence in the Work Environment
- Level 3 Certificate in Assessing Vocational Achievement
- A1 (previously D32, D33) or
- Relevant predecessor NQF assessor qualifications

Assessors holding historical qualifications such as unit A1, unit A2, and/or unit D32, and/or unit D33, are required to demonstrate that they meet the same standards of assessment practice as set out in the Learning and Development National Occupational Standard - Standard 9 Assess Learner Achievement. Suggested evidence that demonstrates this requirement may include CPD records, a Personal Development Plan (PDP) and/or records of work completed.

Internal Quality Assurers

Internal quality assurers must hold or be working towards any of the following:

- Level 4 Award in the Internal Quality Assurance of Assessment Processes and Practice
- Level 4 Certificate in Leading the Internal Quality Assurance of Assessment Processes and Practice
- V1 (previously D34)
- Relevant predecessor NQF internal quality assurance qualifications

Internal verifiers holding historical qualifications such as unit V1 – Conduct internal quality assurance of the assessment process and/or unit D34, are required to demonstrate that they meet the same standards for monitoring assessment processes and decisions as set out in the Learning and Development National Occupational Standard – Standard 11 Internally monitor and maintain the quality of assessment (Appendix 2). Suggested evidence that demonstrates this requirement may include CPD records, a Personal Development Plan (PDP) and/or records of work completed.

It is recommended that internal quality assurance staff also hold a relevant assessing qualification as detailed above.

External Quality Assurers

External quality assurers must hold or be working towards any of the following:

- Level 4 Award in the External Quality Assurance of Assessment Processes and Practice
- Level 4 Certificate in Leading the External Quality Assurance of Assessment Processes and Practice
- V2 (previously D35)

External verifiers holding historical qualifications such as unit V2 – Conduct external quality assurance of the assessment process and/or unit D35, are required to demonstrate that they meet the same standards for monitoring assessment processes and decisions as set out in the Learning and Development National Occupational Standard – Standard 12 Externally monitor and maintain the quality of assessment *(Appendix 3)*. Suggested evidence that demonstrates this requirement may include CPD records, a Personal Development Plan (PDP) and/or records of work completed.

It is recommended that external quality assurance staff also hold a relevant assessing and internal quality assurance qualifications as detailed above.

All new assessors and quality assurance staff must be given a clear action plan for achieving the appropriate qualification(s) and should be countersigned by an appropriately qualified individual until the qualification(s) are achieved.

Desirable Criteria

It is desirable that all Assessors and Quality Assurers should hold professional registration.

Qualification Structure

Learners must complete all mandatory units to gain the required 62 credits.

The Minimum Guided Learning Hours (GLH) for this qualification is 396 hours.

The Total Qualification Time (TQT) for this qualification is 620 hours.

Unit Structures

All units are listed below.

Mandatory units

Unit ref	Unit title	Level	Credit value	GLH
A/617/1178	Anatomy and Physiology for Exercise	2	6	40
F/617/1179	Maximising the Customer Experience in the Exercise Environment	2	4	25
T/617/1180	Client Consultation and Lifestyle Management	2	4	26
A/617/1181	Planning and Delivering Gym-Based Exercise Programmes	2	5	30
F/617/1182	Cleaning and Maintenance within a Gym Environment	2	1	4
Y/617/1186	Applied Anatomy and Physiology	3	5	35
D/617/1187	Lifestyle Management and Motivation for Personal Training	3	5	29
K/617/1189	Consultation, Assessment and Programme Design for Personal Training	3	9	62
D/617/1190	Planning and Delivering Personal Training Programmes	3	8	44
M/617/1193	Nutrition for Physical Activity	3	5	33
T/617/1194	Business Acumen for Personal Trainers	3	5	29
Y/618/1894	Safeguarding adults and adults at risk in a fitness environment	3	5	33

Title:	A/617/1178 Anatomy and Physiology for Exercise
Level:	2
Credit Value:	6
GLH:	40
Learning Outcomes **The learner will:**	**Assessment Criteria** **The learner can:**
1. Understand the structure and function of the cardiorespiratory system	1.1 Describe the structure and functions of the: • heart • blood vessels • lungs 1.2 Describe how blood moves through the four chambers of the heart 1.3 Describe the difference between systemic and pulmonary circulation 1.4 Outline systolic and diastolic blood pressure 1.5 Identify blood pressure classifications 1.6 Identify the main muscles involved inbreathing 1.7 Describe the passage of air through the respiratory tract 1.8 Explain the process of gaseous exchange including: • internal respiration • external respiration
2. Understand the structure and function of the skeleton	2.1 Describe the functions of the skeleton 2.2 Identify the bones of the: • axial skeleton • appendicular skeleton 2.3 Explain the classification of bones

	2.4 Describe the structure of a long bone 2.5 Explain the stages of bone growth 2.6 Describe posture, including: • curves of the spine • neutral spine alignment • potential ranges of motion of thespine • **postural deviations**
3. Understand the **joints** of the skeleton	3.1 Explain the classification of joints 3.2 Describe the structure of synovial joints 3.3 Describe the types of synovial joints and their range of motion 3.4 Describe joint movement potential andjoint actions 3.5 Describe the **anatomical planes of movement** 3.6 Explain the effect of **exercise variables** on biomechanics and kinesiology
4. Understand the muscular system	4.1 Describe the characteristics and functions of the three types of muscle tissue 4.2 Describe the structure of skeletal muscle 4.3 Describe the structure of the different types of connective tissue 4.4 Identify anterior and posterior skeletalmuscles 4.5 Describe the structure and function ofthe pelvic floor muscles 4.6 Describe skeletal muscle fibre types and their characteristics 4.7 Describe the different types of muscleactions: • isometric (static) • isotonic (concentric and eccentric) 4.8 Identify the joint actions brought aboutby specific muscle group contractions 4.9 Define **anatomical terms of location**
5. Understand the life-course of the musculoskeletal system	5.1 Describe the life-course of the **musculoskeletal system** and the

	implications for exercise when working with: • young people (13 – 18) • antenatal and postnatal period • older adults (50 plus)
6. Understand the energy systems and their relation to exercise	6.1 Describe how carbohydrates, fats and proteins are used in the production of energy and adenosine triphosphate 6.2 Describe the by-products of the threeenergy systems including their significance in muscle fatigue 6.3 Explain the use of the three energy systems during aerobic and anaerobic exercise including the effects of: • exercise type, duration and intensity • endurance training on the use offuel for exercise 6.4 Describe: • anabolism • catabolism • excess post-exercise oxygen consumption (EPOC)
7. Understand the nervous system and its relation to exercise	7.1 Describe the functions of the nervoussystem 7.2 Describe the principles of muscle contraction 7.3 Describe the 'all or none law'/motor unitrecruitment 7.4 Explain how exercise can enhance: • neuromuscular connections • improve motor fitness
8. Understand the digestive system	8.1 Describe the functions of the **alimentary canal** 8.2 Explain how fats, proteins and carbohydrates are digested and absorbed 8.3 Explain the role of dietary fibre in themaintenance of gut function 8.4 Explain the role of the liver and pancreas in assisting digestion

	8.5 Identify typical timescales for thedigestive process 8.6 Explain the importance of fluid for thedigestive process

Additional information:

Postural Deviations:

- Kyphosis
- Lordosis
- Scoliosis
- The effects of pregnancy

Anatomical planes of movement:

- Frontal (coronal)
- Sagittal
- Transverse

Exercise variables:

- Leverage
- Single joint (isolation)
- Multi joint (compound)
- Against/across gravity

Anatomical terms of location:

- Superior and inferior
- Anterior and posterior
- Medial and lateral
- Proximal and distal
- Superficial and deep

Musculoskeletal system:

- Tendon
- Ligament
- Muscle
- Joint
- Bone

Alimentary Canal:

- Mouth
- Oesophagus

• Stomach • Small intestine • Large intestine **Joints:** • Immovable • Slightly Moveable • Freely movable - Synovial • Gliding • Pivot • Ball and Socket • Hinge Major	
Unit aim (s)	This unit will give learners the opportunity to show their knowledge and understanding of the structures and functions of key body systems, including how they support exercise and physical activity performance and the effect that training can have on them.
Assessment requirements	This unit is assessed by externally set Multiple Choice Examination

Title:	**F/617/1179 Maximising the Customer Experience in the Exercise Environment**
Level:	**2**
Credit Value:	**4**
GLH:	**25**
Learning Outcomes **The learner will:**	**Assessment Criteria** **The learner can:**
1. Understand how to assess customer needs in a gym environment	1.1 Outline demographics of customers who use a local gym facility 1.2 Describe how demographics affect the products and services on offer 1.3 Outline needs, expectations and aspirations of different customer groups 1.4 Describe how social support and inclusion can be built into the fitnessfacility environment 1.5 Describe different methods of obtainingand reporting customer feedback to support membership retention 1.6 Explain the feedback cycle and the impact of own role on the customer experience

2. Understand customer service in a gym environment	2.1 Identify the roles and responsibilities of: • the gym instructor • the client • other professionals 2.2 Describe an organisation's: • customer service promise • products and services • range of classes • systems and technologies that enhance the customer experience 2.3 Describe the impact of own role on the customer experience 2.4 Outline how to promote additional products and services to customers 2.5 Outline a typical customer journey in agym environment 2.6 Explain the importance of customer retention 2.7 Explain how to influence customer retention
3. Understand how to engage and communicate with customers	3.1 Describe how different communication techniques can be used to engage with customers in a gym environment 3.2 Explain how to adapt communication methods to meet individual needs 3.3 Explain how to adapt inductions for: • individuals • small groups • larger groups 3.4 Explain why it is important to 'walk the gym floor' 3.5 Explain ways to build rapport to maximise the customer experience 3.6 Explain the importance of being accessible and approachable to clients 3.7 Describe 'conflict situations' that may arise and how these can be dealt with

4. Be able to engage and communicate with customers and colleagues	4.1 Interpret customer data in order to understand different types of customers and their needs 4.2 Demonstrate customer engagement by: • delivering an information tour • dealing with customer enquiries • offering an 'end to end' service 4.3 Demonstrate the use of **customer service skills** 4.4 Develop a rapport with customers whilst respecting equality and diversity 4.5 Comply with current **legal and organisational responsibilities**
5. Understand professional practice	5.1 Explain how to present self in line with organisational standards 5.2 Explain policies and procedures relevant to own role within the gym facility 5.3 Outline the following in relation to own role: • national guidelines • legislation • industry codes of professional conduct 5.4 Explain how to keep own knowledge and skills up to date using Continuing Professional Development (CPD) 5.5 Explain how to work within the boundaries of own professional knowledge and competence

6. Understand the principles of business planning in a gym environment	6.1 Outline methods of financial planning 6.2 Describe: • the importance of digital media • how to produce a digital plan • how to set up a professional social media or digital profile • the impact of social media and digital profiles 6.3 Explain how to plan financially, to include a working knowledge of: • profit and loss • tax (income tax, VAT) • national insurance • public and personal liability insurance • music license fees

Additional information:

Customer service skills:

- problem solving
- discretion
- influencing
- being professional
- working as part of a team
- using suitable communication methods, language and terminology

Legal and Organisational responsibilities:

- Health and safety at work
- Equality and diversity
- Safeguarding
- Data protection
- Hazard identification
- Safe working practices
- Ethics and professional conduct

Unit aim (s)	This unit will help learners understand the importance of effective customer service as for themselves, the customer and the organisation. They will also have the opportunity to explore legal and organisational responsibilities and how these will influence their own professional conduct.
Assessment requirements specified by asector or regulatory body (if appropriate)	N/A

Title:	**T/617/1180 Client Consultation and Lifestyle Management**
Level:	**2**
Credit Value:	**4**
GLH:	**26**
Learning Outcomes **The learner will:**	**Assessment Criteria** **The learner can:**
1. Understand the client consultation process in the gym environment	1.1 Explain why the client consultation is an important part of the customer experience 1.2 Outline own role when conducting clientconsultations 1.3 Describe the importance of explaining consultations to clients 1.4 Explain the legal and ethical implications of collecting client information, including: • confidentiality • data protection 1.5 Describe the process of informed consent
2. Understand health screening, fitness testing and risk stratification	2.1 Describe different methods for health screening clients prior to undertaking exercise 2.2 Explain the importance of verbal screening at the start of sessions and how it is conducted 2.3 Explain how to risk stratify clients usingrecognised **risk stratification tools** 2.4 Explain when to defer a client's exercise: • temporarily based on the results of verbal screening

	• to other specialist exercise professionals and/or medical professionals 2.5 Identify absolute contradictions toexercise 2.6 Outline practical assessments that can be used to assess a client's baseline health and fitness 2.7 Explain the limitations of health andfitness testing 2.8 Identify the factors that indicate that aclient is at low, medium or high risk ofan adverse event occurring during exercise
3. Understand lifestyle and health promotion	3.1 Describe how different **factors** canaffect health and wellbeing 3.2 Explain the benefits of physical activity on health and wellbeing 3.3 Outline the current UK physical activity guidelines for different ages 3.4 State the nationally recognised healthy eating recommendations 3.5 Explain how to communicate the benefits of exercise to meet the needs of **different clients** 3.6 Explain the dose-response relationship with respect to exercise and health benefits 3.7 Identify sources of evidence-based health and wellbeing advice 3.8 Describe how **technology** can be used to support the customer experience and increase client motivation and activity levels
4. Understand the prevention and management of common health conditions	4.1 Outline **chronic health conditions** 4.2 Explain how physical activity/exercise can help to prevent and manage **chronic health conditions** 4.3 Explain the role and scope of the gym instructor when offering health and wellbeing advice and guidance

	4.4 Identify exercise or health professionals that clients can be signposted/referredonto
5. Understand principles of behaviour change and exercise adherence	5.1 Explain the stages of the trans-theoretical model of behaviour change 5.2 Outline the role of intrinsic and extrinsicmotivation in exercise adherence 5.3 Describe a range of techniques that can motivate clients and/or improve exercise adherence 5.4 Explain the importance of re-assessments and reviews to support client's progress and motivation
6. Be able to conduct consultations and assessments	6.1 Identify a client's health history and health status 6.2 Assess a client's readiness to exercise 6.3 Demonstrate professionalism and customer service 6.4 Create an environment that supports clients to participate in and adhere to exercise 6.5 Encourage clients to exercise by using both intrinsic and extrinsic motivators 6.6 Provide a positive client experience by conducting safe and effective: • consultations • assessments • **gym inductions** • reviews 6.7 Build rapport with clients with varying needs by: • respecting equality and diversity • showing empathy • using language and communication methods • giving positive, motivating, timely and relevant feedback 6.8 Take responsibility for dealing with client enquiries

	6.9 Offer advice and guidance within own scope of practice to promote healthy lifestyle choices 6.10 Signpost clients to other services/areas of the facility as appropriate 6.11 Model behaviours which promote positive health messages

Additional information:

Risk stratification tools:

- Irwin and Morgan Traffic light system
- Evidence based tools
- Agreed protocols
- Referral
- Care pathways

Different clients:

- Young people (13 – 18 years)
- Adults (19 – 64 years)
- Older people (65+ years)

Technology:

- Wearable technology
- Pedometers
- Smartphone apps

Chronic health conditions:

- Coronary heart disease
- Type-2 diabetes
- Obesity
- Stroke
- Cancer
- Mental health problems
- Musculoskeletal conditions

Factors:

- Resting heart rate
- Blood pressure
- Sub-maximal cardio-respiratory fitness
- Muscular Strength
- BMI
- Waist circumference

Gym inductions: evidence should show how these have been adapted for individuals and groups (maximum of 5 individuals)	
Unit aim (s)	This unit will support the management of clients' lifestyles; exploring the process of liaising with clients to establish needs and wants, ways of encouraging a healthier lifestyle and the importance of physical activity to prevent or manage a client's health.
Assessment requirements	N/A

Title:	**A/617/1181 Planning and Delivering Gym-Based Exercise Programmes**
Level:	**2**
Credit Value:	**5**
GLH:	**30**
Learning Outcomes **The learner will:**	**Assessment Criteria** **The learner can:**
1. Understand components of fitness and programming variables	1.1 Identify the components of fitness 1.2 Outline national and international guidelines for developing components of fitness 1.3 Explain the differences between programming exercise for physical fitness and for health benefits 1.4 Explain the importance of evidence-based practice 1.5 Explain the **principles and variables** of fitness training
2. Understand gym-based exercise training and techniques	2.1 Describe a range of gym-based **cardiovascular training methods** 2.2 Describe a range of gym-based **resistance training methods** 2.3 Describe lifting, passing and spotting techniques 2.4 Describe a range of gym-based functional training including: • equipment • exercises 2.5 Describe a range of gym-based **flexibility and range of motiontraining methods** 2.6 Explain a range of gym-based exercises, including: • purpose

	• technique and alignment • demonstration/coaching points • alternatives • safety points 2.7 Explain the importance of muscle balance when planning programmes
3. Be able to plan gym-based exercise programmes	3.1 Apply knowledge of anatomy and physiology in planning safe and effective gym-based exercise programmes 3.2 Ensure individual requirements are reflected in programme planning 3.3 Set SMART goals linked to a client's individual needs, wants and motivators 3.4 Select gym-based exercises, equipment and methods to develop clients': • muscular fitness (muscular strength and endurance) • cardiovascular fitness • flexibility • functional skills/abilities 3.5 Plan how to minimise any risks relevant to the programme 3.6 Plan timings and sequences for exercise 3.7 Record programme plans in an appropriate format
4. Understand how to deliver gym-based exercise programmes	4.1 Describe coaching, teaching and instructing methods used in gym-based exercises 4.2 Explain how to adopt appropriate positions to observe clients whilst responding to their needs 4.3 Explain how to monitor the safety andintensity of exercise 4.4 Describe the methods of monitoring exercise intensity, including: • benefits • limitations 4.5 Explain how to meet individual clientneeds and abilities by:

	• adapting • regressing • progressing 4.6 Explain the use of corrective strategies in gym-based exercise 4.7 Explain how to review a gym-based exercise programme in consultation with the client 4.8 Describe how to carry out a risk assessment in a gym environment 4.9 Explain how to minimise any risks relevant to the programme 4.10 Explain how to ensure equipment is safely: • assembled • dismantled • stored, including the use of storage plans 4.11 Identify where to locate manufacturer's guidelines for equipment
5. Be able to deliver gym-based exercise programmes	5.1 Provide client specific: • instruction points • feedback • encouragement • reinforcement 5.2 Demonstrate safe and effective techniques for: • warm up and cool down activities • **a range of exercises** • using appropriate **gym-based equipment** 5.3 Correct client's exercise technique to ensure safe: • alignment • execution • use of equipment 5.4 Adopt appropriate positions to observe and respond to client needs 5.5 Monitor the safety and intensity of the exercise

	5.6 Suggest adaptations, alternatives, progressions and/or regressions that meet client needs 5.7 Demonstrate coaching, teaching and/or instructing methods 5.8 Demonstrate efficient time management 5.9 Ensure clients understand how to continue their programme of gym-based exercise without direct supervision 5.10 Ensure client safety at all times by identifying and making safe potential hazards including: • activity areas • equipment • individuals • physical risks 5.11 Comply with relevant legal and organisational procedures
6. Be able to review gym-based exercise programmes	6.1 Carry out regular reviews to ascertain how well the programme is meeting theclient's: • physiological needs • psychological needs 6.2 Review the programme at regularintervals to: • identify areas for development • suggest necessary changes/adaptations to the contentand/or delivery of the session/s • monitor and review progresstowards client goals • signpost to other areas of the facility as relevant to the client'sneeds and interests 6.3 Appraise participants' performance in relation to the session 6.4 Walk the gym floor, supporting customers effectively 6.5 Appraise their own delivery of sessions with reference to best practice

Additional information:

Principles and variables:

- FITT (frequency, intensity, time and type)
- adaptation
- specificity
- progressive overload
- reversibility
- adaptability
- individuality
- recovery time

Cardiovascular training methods and equipment may include:

Methods

- Continuous
- Interval
- Fartlek

Equipment

- Upright cycle
- Recumbent cycle
- Treadmill
- Stepper
- Rowing machine
- Elliptical trainer
- Cross trainer

Resistance training methods may include:

- Fixed weight machines (e.g. fixed pin, plate loaded, pulleys etc.)
- Free weights (e.g. dumbbells, barbells, benches, squat racks etc.)
- Small equipment e.g. resistance bands, medicine balls etc.)
- Body weight exercises

Flexibility and range of motion training methods:

- Static stretching (including developmental)
- Ballistic stretching
- Dynamic stretching
- Proprioceptive neuromuscular techniques

Gym-based equipment:

- Cardiovascular machines
- Resistance machines
- Free weights

• Body weight exercises • Small equipment	
Unit aim (s)	This unit will enable learners to explore how they will plan, monitor and review gym-basedsessions for a range of clients.
Assessment requirements	N/A

Title:	**F/617/1182 Cleaning and Maintenance within a Gym Environment**
Level:	**2**
Credit Value:	**1**
GLH:	**4**
Learning Outcomes **The learner will:**	**Assessment Criteria** **The learner can:**
1. Understand cleaning and waste management	1.1 Describe standard operating procedures with regards to routine maintenance and cleaning 1.2 Describe the uses of cleaning substances and equipment 1.3 Outline Personal Protective Equipment (PPE) that is necessary in the gym environment 1.4 Identify different types of waste relevantto a gym environment 1.5 Explain how to safely dispose of waste in line with: • organisational procedures • environmental policy/considerations • COSHH
2. Be able to clean and maintain the gym environment	2.1 Plan and prepare own cleaning activities with reference to a cleaningschedule 2.2 Use appropriate cleaning substances and equipment in line with: • safety procedures • cleaning schedules 2.3 Communicate with customers and colleagues whilst cleaning to ensure safety

Additional information: N/A	
Unit aim (s)	This unit will give learners the opportunity to show that they understand why it is importantto keep the gym environment clean and are able to carry out regular and necessary cleaning activities.
Assessment requirements	Learning outcome 2: simulation and the use of a real work environment may be used

Title:	**Y/617/1186 Applied Anatomy and Physiology**
Level:	**3**
Credit Value:	**5**
GLH:	**35**
Learning Outcomes **The learner will:**	**Assessment Criteria** **The learner can:**
1. Understand the cardio-respiratory system and its relation to exercise and health	1.1 Explain the following terms in relation to short and long term exercise and theefficiency of the heart: • cardiac cycle • stroke volume • cardiac output 1.2 Explain the effect of disease processes on the structure and function of blood vessels 1.3 Describe health risks associated with systolic and diastolic blood pressure classifications 1.4 Explain the short and long term effects of cardiorespiratory exercise on: • blood pressure • respiration • venous return • implications of blood pooling
2. Understand the skeletal system and its relation to exercise	2.1 Explain how bones and bone density are affected by: • the role of osteoblasts and osteoclasts • hormonal contribution • body weight • dietary influences • weight bearing and non-weight bearing exercise

	• high and low-impact exercise 2.2 Explain factors that affect the **stability of joints** 2.3 Explain potential risks resulting from **unstable and dysfunctional joints** 2.4 Explain how the structure of joints enables them to act as shock absorbers 2.5 Explain the bone modelling and remodelling processes
3. Understand the muscular system and its relation to exercise	3.1 Describe the actions of the **majormuscles** of the body 3.2 Identify the muscle attachment sites (origins and insertions) for the **major muscles** of the body 3.3 Describe joint actions brought about by contraction of specific **muscle groups** 3.4 Describe the role of contributory muscles as: • agonist • antagonist • synergist • fixators 3.5 Describe the significance of anatomical axes and planes of movement to muscle balance and function 3.6 Explain the effect of the following exercise variables on biomechanics and kinesiology: • first, second and third class levers • centre of gravity • momentum • force • length-tension relationships • open and closed kinetic chain movements 3.7 Explain the following principles of muscle contraction in relation to exercise:

	• concentric and eccentric (isotonic) • isometric and isokinetic • stretch and reverse stretch reflexes • sliding filament theory • size principle of motor unitrecruitment 3.8 Explain the short and long-term effects of exercise on muscles including: • delayed onset muscle soreness (DOMS) • muscle fatigue • hypertrophy • metabolic benefits 3.9 Describe the response of muscles to: • overuse • underuse • misuse
4. Understand postural and core stability	4.1 Describe the structure and function of: • 'core' muscles • stabilising ligaments of the spine 4.2 Explain the classification of core muscles including if they are: • 'local/deep' • 'global/superficial' 4.3 Describe the structure and function ofintervertebral discs 4.4 Explain the effects of abdominal adiposity and poor posture on movement efficiency 4.5 Describe abnormal degrees of curvature of the spine and their implications for physical activity 4.6 Explain the impact of core stabilisation exercise including the potential for injuryand aggravation of problems
5. Understand the nervous system and its relation to exercise	5.1 Explain the function, in relation to exercise, of: • the central nervous system (CNS)

	• the Peripheral Nervous System (PNS) including somatic and autonomic systems 5.2 Describe nervous control and transmission of a nervous impulse 5.3 Explain the process of motor unit recruitment including the: • significance of a motor unit's size • number of muscle fibres 5.4 Explain the function of muscle proprioceptors including muscle spindles and Golgi tendon organs 5.5 Describe the relevance of proprioceptors to exercise, to include: • the stretch reflex • reciprocal inhibition (inverse stretch reflex) • the 'stretch-shortening cycle' and its application to plyometric training 5.6 Explain the neuromuscular adaptations associated with training, to include: • more efficient motor unitrecruitment • improved inter-muscular coordination • improved intramuscular coordination 5.7 Explain the benefits of improved neuromuscular coordination to exercise performance
6. Understand the endocrine system and its relation to exercise and health	6.1 Describe the structure of the endocrine system, including both glands and hormones 6.2 Explain the main functions of thefollowing hormones: • Human Growth Hormone (HGH) • Thyroxine • Parathyroid hormone • Corticosteroids

	• Adrenaline and noradrenaline (catecholamines) • Insulin • Glucagon • Oestrogen • Testosterone 6.3 Explain typical hormonal responses to: • training • overtraining 6.4 Describe signs and symptoms of overtraining
7. Understand energy systems and their relation to exercise	7.1 Explain how the energy systems function independently and interact withone another 7.2 Describe ATP re-synthesis 7.3 Explain aerobic and anaerobic thresholds and their significance in the planning of training programmes 7.4 Explain the effects of different **training methods** on energy systems

Additional information:

Major Muscles/ Muscle groups:

- Rotator cuff: SITS (S: supraspinatus I: infraspinatus T: teres minor S: subscapularis).
- Shoulder and chest: levator scapulae, pectoralis minor, pectoralis major, serratus anterior, trapezius, rhomboids major/minor, teres major, latissimus dorsi
- Spinal extensors: erector spinae, iliocostalis, longissimus, spinalis, multifidus, quadratus lumborum
- Hip flexors (iliopsoas): iliacus, psoas major
- Adductors: magnus, brevis, longus, pectineus, gracilis, sartorius.
- Abductors: gluteus medius, gluteus minimus, piriformis, tensor fascia latae.
- Abdominals: internal and external obliques, transversus abdominus, rectus abdominus
- Intercostals: diaphragm
- 'Core' and pelvic floor muscles
- Upper arm: biceps brachii, brachialis, triceps brachii
- Upper leg: biceps femoris, semimembranosus, semitendinosus, quadriceps (rectus femoris, vastus lateralis, vastus medialis, vastus intermedius)
- Lower leg: soleus, gastrocnemius

<table>
<tr><td colspan="2">Stability of joints:
• passive structures (tensile strength and laxity of ligaments)
• active structures (control and strength of stabilising muscles crossing the joint)

Unstable and dysfunctional joints:
• lack of biomechanical efficiency
• reduction in transmission of stress
• increased risk of injury
• reduced shock absorption
• poor posture

Training methods:
• CV continuous training
• CV interval training
• CV fartlek training
• HIIT training
• Resistance strength training
• Resistance endurance training</td></tr>
<tr><td>Unit aim (s)</td><td>This unit will enable learners to show that they understand the main body systems, theeffect that physical activity and exercise hason them and the ways in which these systems influence our health, fitness and performance.</td></tr>
<tr><td>Assessment requirements</td><td>This unit is assessed by externally set Multiple Choice Examination</td></tr>
</table>

Title:	D/617/1187 Lifestyle Management and Motivation for Personal Training
Level:	3
Credit Value:	5
GLH:	29
Learning Outcomes **The learner will:**	**Assessment Criteria** **The learner can:**
1. Understand the components of a healthy lifestyle and factors that affect health and wellbeing	1.1 Explain **factors** that affect health andwellbeing 1.2 Explain how to educate clients on a healthy lifestyle
2. Understand psychological factors influencing behaviour change	2.1 Describe **psychological factors** that can influence change 2.2 Explain the importance of psychological questionnaires in influencing behaviour change
3. Understand strategies to encourage long-term adherence to positive lifestyle practices	3.1 Describe different theories and approaches that can motivate **positive behaviour change** 3.2 Outline **interventions and strategies** to use at each stage of change 3.3 Describe how **technological advancements** can be used to support the client to increase: • physical activity levels • motivation • focus
4. Be able to implement strategies to encourage long term adherence to positive lifestyle practices	4.1 Use strategies to establish the client's readiness to change their behaviour 4.2 Use evidence-based strategies and techniques to create a positive environment

	4.3 Recognise individual's barriers to exercise 4.4 Implement strategies to support clientsto overcome barriers to participation 4.5 Monitor individual's goals and adapt accordingly 4.6 Use strategies to maintain contact and motivate clients between sessions
5. Understand health conditions and medically controlled diseases	5.1 Describe a range of common **health conditions** and medically controlled diseases including the: • features • signs • symptoms 5.2 Explain professional role boundaries and scope of practice when: • working with clients with common health conditions • working with clients with medically controlled diseases • offering health and wellbeing advice 5.3 Outline how to seek **evidence-based health and wellbeing advice**

Additional information:

Factors:

- smoking
- alcohol
- nutrition
- physical activity levels and preferences
- weight management
- rest, relaxation and relaxation training
- stress (signs, symptoms, effects and management)
- work patterns/job
- relevant personal circumstances,
- posture

Psychological factors:

- self-efficacy
- Intrinsic and extrinsic motivation

- social support and peer pressure
- Individual client needs and differences: (e.g. experienced, inexperienced, active andinactive)
- barriers to change: perceived and actual, self-recognition of own barriers
- positive reinforcement

Positive behaviour change:
- arousal theories
- motivational interviewing techniques
- trans-theoretical model (stages of change)

Interventions and strategies:
- decisional balance sheet/cost benefit analysis
- fitness testing
- strategies to overcome barriers
- SMART goal setting
- behavioural modification techniques
- planning for relapse/contingency planning
- rewards
- focusing and self-monitoring
- support systems and reinforcement strategies

Technological advancements:
- wearable technology
- pedometers
- mobile phone applications

Health conditions:
- obesity
- osteoporosis
- mental health problems (stress/depression/anxiety)
- lower back pain
- hypertension
- angina
- coronary heart disease (CHD)
- stroke
- pre-diabetes and diabetes
- prevalent forms of arthritis
- cancer

• asthma • chronic obstructive pulmonary disease (COPD) • chronic fatigue • eating disorders (anorexia nervosa and bulimia nervosa) **Evidence based health and wellbeing advice**: • Where to signpost clients • Recommended physical activity guidelines • Health benefits of physical activity • Researching of unfamiliar medical conditions	
Unit aim (s)	This unit will give learners the opportunity to explore the factors that influence a healthy lifestyle, to consider the ways in which clientsmay be persuaded to adopt and maintain a healthier and more active lifestyle and the relationship between lifestyle and health.
Assessment requirements	N/A

Title:	**K/617/1189 Consultation, Assessment and Programme Design for Personal Training**
Level:	**3**
Credit Value:	**9**
GLH:	**62**
Learning Outcomes **The learner will:**	**Assessment Criteria** **The learner can:**
1. Understand how to obtain client information to inform programme planning	1.1 Explain the benefits of a professional membership for personal trainers 1.2 Describe industry codes of professional and ethical conduct related to own role 1.3 Explain guidelines for physical contact with clients 1.4 Explain how to conduct a professional one to one consultation with clients 1.5 Explain the importance of obtaining client's consent 1.6 Explain factors that influence the selection of client consultation methods 1.7 Explain how to use a range of health and fitness assessments, considering their suitability for the client 1.8 Explain factors that would influence theselection of client fitness assessment activities 1.9 Describe the principles of postural assessment 1.10 Describe how to use regular **assessments** to monitor client progression towards goal achievement

2. Be able to conduct client consultations to collect and analyse information	2.1 Interact professionally with clients and other relevant individuals 2.2 Obtain informed consent 2.3 Collect the information required to design, tailor and deliver an effective exercise programme 2.4 Risk-stratify clients using recognised **risk stratification tools** 2.5 Seek information from, or signpost clients, to other specialists or medical professionals where relevant 2.6 Support the client to recognise and develop their intrinsic and extrinsic motivation to exercise
3. Be able to conduct health and fitness assessments appropriate to individual clients	3.1 Plan an assessment appropriate to the: • individual client • assessment conditions • equipment • time available 3.2 Prior to commencing any physical assessments, advise the client of the: • purpose of the assessment • correct procedures • protocols • risks 3.3 Carry out a client's pre-exercise health and fitness assessment using **evidence-based protocols** 3.4 Interpret results using accepted criteria and 'norm' ranges where appropriate 3.5 Develop a profile of the client to assistin the design of a safe and effective programme tailored to their specific needs 3.6 Inform clients of analysis outcomes 3.7 Agree actions and goals using appropriate language 3.8 Undertake regular re-assessments to monitor client progress and goal achievement

	3.9 Use appropriate products and IT to support and manage effective personal training
4. Understand key principles and guidelines for programming exercise for a range of clients	4.1 Describe the key principles of designing short, medium and long-term exercise programmes 4.2 Explain how to tailor exercise programmes for a **range of clients** 4.3 State **current international guidelines** for developing the different componentsof fitness 4.4 Describe a range of **protocols and tools for monitoring exercise** intensity 4.5 Identify effective repetition and resistance ranges to develop: • strength • power • endurance • muscle hypertrophy 4.6 Identify heart rate training zone models for developing aerobic and anaerobic capacity 4.7 Explain the purpose and principles of progressive programming and periodisation
5. Understand how to manipulate **training variables** to meet different programminggoals	5.1 Explain the **principles and variables offitness training** 5.2 Explain how to manipulate the FITT principles to tailor exercise programmes 5.3 Explain how to manipulate the principles of training to tailor exercise programmes to support goal achievement 5.4 Describe the typical signs and symptoms of overtraining
6. Understand how to deliver different modes of exercise in different environments	6.1 Explain how to design and deliver programmes for environments that arenot specifically designed for exercise/physical activity including:

	• outdoors • home-based 6.2 Identify a range of resources and exercise modes suitable for training clients in different environments
7. Understand how to design small group training sessions	7.1 Explain how to adapt the design and delivery of sessions for use with small groups 7.2 Describe how to balance the needs of the individual and the group 7.3 Explain how to ensure the safety of all clients at all times
8. Understand a range of fitness training techniques and methods	8.1 Describe **cardiovascular training techniques and methods** 8.2 Describe **resistance training techniques and methods** 8.3 Describe **functional skill training methods and techniques** 8.4 Describe **flexibility training techniques and methods** to facilitate increased range of motion 8.5 Identify the suitability of training techniques and methods for different clients, including: • sedentary clients • experienced clients • high-level performers

Additional information:

Range of clients:

- sedentary (untrained)
- experienced (trained)
- high-level performer (well-trained)
- recovering from injury
- over-trained
- sport-specific performer
- clients with low-risk health conditions

Current International Guidelines:

- ACSM

Principles and variables of fitness training:

- FITT principles (frequency, intensity, time and type)
- adaptation
- modification and progression for each component of FITT
- implications of specificity
- progressive overload
- reversibility
- adaptability
- individuality
- recovery time

Training variables:

- choice of exercises
- sequence of exercise
- resistance and repetitions
- number of sets
- rest between sets (short-term recovery)
- speed of movement
- type of muscle contraction
- duration of session
- volume of training
- split routines
- rest between sessions (long-term recovery and the importance of adequate rest periodsbetween training loads)

Evidence-based protocols:

- PAR-Q
- PAR-Q+
- health commitment statement
- organisation/employer devised methods

Risk stratification tools:

- Irwin and Morgan
- ACSM
- national/locally agreed protocols
- referral/care pathways

Assessments:

- Height, weight and BMI

- Resting heart rate
- Blood pressure
- Cardiorespiratory fitness (cooper run, YMCA step test, CV machine pre-programmed tests, etc.)
- Muscular strength (1RM, grip strength, etc.)
- Muscular endurance (press ups, sit ups, abdominal curl, etc.)
- Flexibility (sit and reach, visual assessments, etc.)
- Body composition (bioelectrical impedance, skinfold callipers)
- Basic postural analysis

Cardiovascular training techniques and methods may include:

- Interval training
- Fartlek
- Continuous

Resistance training techniques and methods may include:

- super-sets
- tri-sets
- giant sets
- pre/post exhaust
- pyramid systems
- drop sets
- German volume training
- negatives/eccentric training
- circuit resistance training

Flexibility training techniques and methods may include:

- mobilisation of joints
- static stretching
- dynamic stretching
- proprioceptive neuromuscular facilitation

Functional skill training methods and techniques:

- A range of functional equipment
- movement patterns
- muscle actions
- components of fitness required for daily living

Unit aim (s)	This unit allows the learner to show that they understand the factors and processes involved in consulting with clients and are able to use collected information to design fitness programmes that are appropriate to the clients' needs and wants.
Assessment requirements	N/A

Title:	**D/617/1190 Planning and Delivering Personal Training Programmes**
Level:	**3**
Credit Value:	**8**
GLH:	**44**
Learning Outcomes **The learner will:**	**Assessment Criteria** **The learner can:**
1. Be able to plan sessions and programmes for a range of clients	1.1 Apply **exercise science, methods and techniques** to programme design 1.2 Plan session and programme content to achieve client's short, medium and long-term goals 1.3 Set SMART goals linked to a client's individual needs, wants and motivators 1.4 Plan appropriate timings, sequences and intensity of exercises 1.5 Prepare equipment and resources as required 1.6 Plan warm-up and cool down activities appropriate to the session and individual client 1.7 Plan sessions for different environments: • gym • studio/sports hall • outdoors • client's home or other confined space 1.8 Plan sessions for both individuals and small groups

2. Understand how to observe and adapt exercise technique	2.1 Explain communication techniques that can be used when instructing clients including verbal and non-verbal 2.2 Explain how to observe and monitor clients during sessions 2.3 Describe teaching strategies that can be used to correct and enhance client performance, including: • one-to-one sessions • small group training 2.4 Describe methods of maintaining clients' motivation 2.5 Explain why it is necessary to modify, adapt, regress or progress exercise programmes 2.6 Explain why it is important to monitor individual performance during small group training
3. Be able to demonstrate professional conduct when delivering personal training sessions	3.1 Introduce self, build rapport and help clients feel at ease in the exercise environment 3.2 Explain to clients: • planned objectives of the session • exercises involved including their physical and technical demand • how objectives and exercises support their goals 3.3 Assess clients' readiness and motivation to take part in the planned exercises 3.4 Agree with clients any changes to the planned exercises or physical activities that: • meet their goals and preferences • enable them to maintain progress 3.5 Record changes to client's plans 3.6 Work within boundaries of own role 3.7 Maintain a professional duty of care to ensure client safety and wellbeing 3.8 Comply with **legal responsibilities**

4. Be able to instruct and adapt personal training sessions to meet the needs of different clients	4.1 Deliver personal training sessions to individuals and small groups 4.2 Meet client needs by delivering a range of: • cardiovascular training techniques and methods • resistance training techniques and methods • flexibility training techniques and methods 4.3 Deliver a range of functional and skill training techniques and methods to meet client needs, including: • functional equipment • appropriate movement patterns 4.4 Use motivational techniques to support the client 4.5 Provide a warm up and cool down appropriate to the client(s), the planned exercise and the environment 4.6 Adapt verbal and non-verbal communication methods to make sure clients understand what is required 4.7 Throughout the session, provide the client with specific: • instruction • feedback • encouragement • positive reinforcement 4.8 Observe, monitor and analyse the client's performance throughout thesession 4.9 Correct the client's technique at appropriate points to ensure safe and effective alignment, execution and useof equipment 4.10 Progress or regress exercises according to client's performance 4.11 Offer modifications, adaptations or alternative exercises when required

5. Be able to review sessions and programmes	5.1 Evaluate sessions and programmes 5.2 Review client goals based on outcomes and revise sessions and programme accordingly 5.3 Amend future session plans and own performance based on evaluation and feedback from the client 5.4 Give feedback to clients based on review

Additional information:

Exercise science, methods and techniques:

- the musculoskeletal system
- kinesiology and balanced muscular development
- the cardiorespiratory system
- the energy systems
- physiological responses to exercise
- measuring exercise intensity/response
- exercise safety and contraindications

Cardiovascular training techniques and methods may include:

- Interval training
- Fartlek
- Continuous

Resistance training techniques and methods may include:

- super-sets
- tri-sets
- giant sets
- pre/post exhaust
- pyramid systems
- drop sets
- German volume training
- negatives/eccentric training
- circuit resistance training

Flexibility training techniques and methods may include:

- mobilisation of joints
- static stretching
- dynamic stretching
- proprioceptive neuromuscular facilitation

Legal responsibilities: • health and safety at work • equality and diversity • safeguarding • data protection • hazard identification • safe working practices • ethics and professional conduct **Evaluate sessions and programmes**: • session/programme aims • SMART goals • session content • participant performance • own performance (preparation, delivery) • health and safety	
Unit aim (s)	This unit will give learners to opportunity toshow that they understand fitness training methods and techniques and that they can deliver relevant and appropriate fitness session in a professional manner.
Assessment requirements	N/A

Title:	M/617/1193 Nutrition for Physical Activity
Level:	3
Credit Value:	5
GLH:	33
Learning Outcomes **The learner will:**	**Assessment Criteria** **The learner can:**
1. Understand the principles of nutrition	1.1 Explain the functions of: • macronutrients • micronutrients • hydration 1.2 Describe the **main nutrient groups** and their food sources 1.3 Explain the impact of nutrition on health
2. Understand key nutritional strategies and guidelines	2.1 Describe the principles and key features of current government healthy eating guidelines 2.2 Distinguish between credible and non-credible sources of nutritional information and guidance to advise clients 2.3 Explain how current government healtheating advice can be used to support clients with: • weight management • hypertrophy • sports performance 2.4 Explain how to educate clients to make good food choices
3. Understand how to use **nutritional assessment tools**	3.1 Describe tools that can be used to collect client's nutritional information 3.2 Explain how to analyse information so that clients' needs and nutritional goals can be identified

	3.3 Explain how to estimate resting metabolic rate and energy requirements to support the achievement of client goals 3.4 Explain how to feedback results of nutritional assessments to clients 3.5 Explain the circumstances in which a client should be referred to another professional before commencing an exercise programme
4. Be able to collect and analyse nutritional information	4.1 Use **nutritional assessment tools** to collect information about client's dietaryhabits 4.2 Record information from nutritional assessments 4.3 Analyse collected information and identify areas for improvement within own scope of practice
5. Be able to apply the principles of nutrition	5.1 Use appropriate strategies to educate clients about healthy eating within: • scope of own practice • current government guidelines 5.2 Provide clients with information according to their individual health andnutrition needs 5.3 Agree review points with the clients 5.4 Monitor, evaluate and review the clients'progress towards their nutritional goals

Additional information:

Main nutrient groups:

- proteins
- fats (saturated, unsaturated and essential fatty acids)
- carbohydrates
- vitamins
- minerals
- water

Nutritional assessment tools:

- food diary
- food recall log
- food frequency questionnaire body composition assessment

Unit aim (s)	This unit will enable the learner to demonstrate that they can apply the principles of nutrition to support client goalsas part of an exercise and physical activity programme.
Assessment requirements	N/A

Title:	**T/617/1194 Business Acumen forPersonal Trainers**
Level:	**3**
Credit Value:	**5**
GLH:	**29**
Learning Outcomes **The learner will:**	**Assessment Criteria** **The learner can:**
1. Understand how to create business and marketing plans to support a successful personal training business	1.1 Describe **marketing strategies and techniques** that could help to support apersonal training business 1.2 Explain how to conduct **market research** 1.3 Explain the purpose of developing a: • marketing plan • business plan 1.4 Explain the importance of developing a: • business plan • marketing plan 1.5 Explain how to produce a business plan 1.6 Describe how IT systems can be used to: • support marketing and sales • monitor and interpret data 1.7 Explain **current legislation** and ethical practice that affects the use of technology
2. Understand how to manage finances related to a personal training business	2.1 Explain the principles of business financials including: • financial forecasting • planned income and expenditure • sales • targets 2.2 Describe **accounting methods** forrecording financial performance

	2.3 Identify current tax and insurance legislation 2.4 Explain UK tax requirements, including: • Income tax (PAYE) • national insurance contributions • self-assessment 2.5 Identify where to find information andsupport regarding UK tax 2.6 Explain how IT systems can be used to support record keeping, finance and accounting
3. Be able to create a business and marketing plan to support a successfulpersonal training business	3.1 Conduct market research relevant to their prospective personal training business 3.2 Describe the profiles of prospective clients 3.3 Create a mission statement for a personal training business 3.4 Develop a marketing plan for a personal training business 3.5 Create a business plan for a personal training business 3.6 Use IT products to support and managea personal training business 3.7 Present a financial forecast for a personal training business

Additional information:

Marketing strategies and techniques:

- Brand awareness
- Self-promotion
- Use of social media

Market research:

- SWOT analysis (strengths, weaknesses, opportunities, threats)
- PEST analysis (political, economic, social, technological)
- On-line research
- Review of competitors
- Industry reports

<table>
<tr><td colspan="2">Current legislation:
• General Data Protection Regulation (GDPR, 2018)
• intellectual property (IP) law
• patents
• copyright law

Accounting methods:
• Profit and loss (include differences between gross and net profit)
• Balance sheet</td></tr>
<tr><td>Unit aim (s)</td><td>This unit will enable the learner to show they know and understand the principles of setting up and running a personal training business from the creation of a business plan.</td></tr>
<tr><td>Assessment requirements</td><td>N/A</td></tr>
</table>

Title:	**Y/618/1894 Safeguarding adults and adults at risk in a fitness environment**
Level:	**3**
Credit Value:	**5**
Calculated GL:	**33**
Learning Outcomes **The learner will:**	**Assessment Criteria** **The learner can:**
1. Understand what is meant by safeguarding adults and adults at risk	1.1 Define the term 'safeguarding' 1.2 Define what is meant by adults 'at risk' 1.3 Describe different types of abuse, including: • **Indicators** • **Static and Dynamic risk** 1.4 Explain the **6 key principles** of safeguarding adults and adults at risk
2. Understand how safeguarding legislation is regulated	2.1 Describe the current Government **legislation** that supports the safeguarding ofadults and adults at risk 2.2 Describe safeguarding policies that are relevant to adults and adults at risk 2.3 Describe procedures for reporting concerns regarding safeguarding for adultsand adults at risk 2.4 Describe the recruitment procedure forthose working with adults in sport
3. Understand the safeguarding of adults and adults at risk in a fitness environment	3.1 Explain measures to ensure 'good practice' 3.2 Explain behaviour that would constitute'poor practice'

	3.3 Explain what is meant by 'appropriate behaviour' in relation to safeguarding adultsand adults at risk 3.4 Describe the difference between appropriate and inappropriate behaviour 3.5 Explain the difference between poor practice and abuse in a fitness environment 3.6 Outline where to seek advice and **support** on safeguarding adults and adultsat risk in a fitness environment
4. Understand roles and responsibilities in safeguarding adults and adults at risk in a fitness environment	4.1 Describe own role and responsibilities in terms of safeguarding adults and adults at risk 4.2 Describe the roles and responsibilities of other people who are involved in safeguarding adults and adults at risk 4.3 Explain the scope of own role regarding safeguarding and in what circumstances helpand support of others would be sought 4.4 Describe how to appropriately respond toan adult should they make a disclosure 4.5 Explain why it is important to share relevant information regarding the safeguarding of adults and adults at risk
5. Be able to safeguard adults and adults at risk in a fitness environment	5.1 Create a safe fitness environment 5.2 Employ appropriate behaviour and good working practices with all adults in the fitnessenvironment, including applying: • the 6 key principles • relevant government legislation 5.3 Recognise potential indicators of adult abuse 5.4 Recognise poor practice that could put adults at risk 5.5 Apply procedures around safeguarding adults and adults at risk 5.6 Seek advice and support when required 5.7 Demonstrate accurate report writing

Additional information:

Government legislation can include:

- The Care Act 2014
- Safeguarding Vulnerable Groups Act 2006
- The Equality Act 2010
- The Mental Capacity Act 2005
- GDPR 2018
- Human Rights Act 1998
- Sexual Offences Act 2003

Where to seek advice and **support** on safeguarding adults and adults at risk in a fitnessenvironment can include:

- local authority
- local sport advisory board
- National Governing Bodies (NGB)
- adult social services

6 key principles of safeguarding adults and adults at risk:

- Empowerment
- Prevention
- Proportionality
- Protection
- Partnership
- Accountability

Indicators: the signs and/or symptoms associated with each type of abuse identified

Static and Dynamic risk factors: the possible circumstance/s that may lead to abuse

Unit aim (s)	This unit will give learners an understanding of safeguarding appropriate to their role. They will explore the legislation, policies and procedures relevant in a fitness environment and gain the confidence to implement safeguarding procedures that are necessary in order to safeguard and protect adults and adults at risk.
Assessment requirements	For some criteria in LO5 where there is no naturally occurring evidence, learners may provide alternatives to observable assessment such as through questioning or reflective accounts

Additional Information:

Test Specification for A/617/1178 Level 2 Anatomy and Physiology for Exercise

The unit "A/617/1178 Anatomy and Physiology for Exercise" is externally assessed by a Multiple Choice Question (MCQ) examination. The test rules for this MCQ test are as follows:

- Total number of questions: 40
- Pass mark: 24/40 this equates to 60%
- Test duration: 60 minutes

Additional notes:

- Learners should attempt all questions within each section of the test.
- The MCQ test will be taken on Surpass.
- The questions are written against the assessment criteria which is set out within the qualification.
- The table below shows the split of the questions against the assessment criteria and their learning objectives.

Learning Outcome	Assessment Criteria	Number of Questions per learning objective
1. Understand the structure and function of the cardiorespiratory system	1.1 Describe the structure and functions of the: • heart • blood vessels • lungs	7
	1.2 Describe how blood moves through the four chambers of the heart	
	1.3 Describe the difference between systemic and pulmonary circulation	
	1.4 Outline systolic and diastolic blood pressure	
	1.5 Identify blood pressure classifications	
	1.6 Identify the main muscles involved in breathing	
	1.7 Describe the passage of air through the respiratory tract	
	1.8 Explain the process of gaseous exchange including: • internal respiration • external respiration	
2. Understand the structure and function of the skeleton	2.1 Describe the functions of the skeleton	6
	2.2 Identify the bones of the: • axial skeleton • appendicular skeleton	
	2.3 Explain the classification of bones	
	2.4 Describe the structure of a long bone	
	2.5 Explain the stages of bone growth	
	2.6 Describe posture, including: • curves of the spine • neutral spine alignment • potential ranges of motion of the spine • postural deviations	
3. Understand the joints of the skeleton	3.1 Explain the classification of joints	5
	3.2 Describe the structure of synovial joints	
	3.3 Describe the types of synovial joints and their range of motion	
	3.4 Describe joint movement potential and joint actions	
	3.5 Describe the anatomical planes of movement	
	3.6 Explain the effect of exercise variables on biomechanics and kinesiology	
4. Understand the muscular system	4.1 Describe the characteristics and functions of the three types of muscle tissue	8
	4.2 Describe the structure of skeletal muscle	
	4.3 Describe the structure of the different types of connective tissue	
	4.4 Identify anterior and posterior skeletal muscles	
	4.5 Describe the structure and function of the pelvic floor muscles	
	4.6 Describe skeletal muscle fibre types and their characteristics	
	4.7 Describe the different types of muscle actions: • isometric (static) • isotonic (concentric and eccentric)	

	4.8 Identify the joint actions brought about by specific muscle group contractions	
	4.9 Define anatomical terms of location	
5. Understand the life-course of the musculoskeletal system	5.1 Describe the life-course of the musculoskeletal system and the implications for exercise when working with: • young people (13 – 18) • antenatal and postnatal period • older adults (50 plus)	1
6. Understand the energy systems and their relation to exercise	6.1 Describe how carbohydrates, fats and proteins are used in the production of energy and adenosine triphosphate	4
	6.2 Describe the by-products of the three energy systems including their significance in muscle fatigue	
	6.3 Explain the use of the three energy systems during aerobic and anaerobic exercise including the effects of: • exercise type, duration and intensity • endurance training on the use of fuel for exercise	
	6.4 Describe: • anabolism • catabolism • excess post-exercise oxygen consumption (EPOC)	
7. Understand the nervous system and its relation to exercise	7.1 Describe the functions of the nervous system	4
	7.2 Describe the principles of muscle contraction	
	7.3 Describe the 'all or none law'/motor unit recruitment	
	7.4 Explain how exercise can enhance: • neuromuscular connections • improve motor fitness	
8. Understand the digestive system	8.1 Describe the functions of the alimentary canal	5
	8.2 Explain how fats, proteins and carbohydrates are digested and absorbed	
	8.3 Explain the role of dietary fibre in the maintenance of gut function	
	8.4 Explain the role of the liver and pancreas in assisting digestion	
	8.5 Identify typical timescales for the digestive process	
	8.6 Explain the importance of fluid for the digestive process	

Test Specification for Y/617/1186 Level 3 Applied Anatomy and Physiology

The unit "Y/617/1186 Applied Anatomy and Physiology" is externally assessed by a Multiple Choice Question (MCQ) examination. The test rules for this MCQ test are as follows:

- Total number of questions: 40
- Pass mark: 24/40 this equates to 60%
- Test duration: 60 minutes

Additional notes:

- Learners should attempt all questions within each section of the test.
- The MCQ test will be taken on Surpass.
- The questions are written against the assessment criteria which is set out within the qualification.
- The table below shows the split of the questions against the assessment criteria and their learning objectives.

Learning Outcome	Assessment Criteria	Number of Questions per test
1. Understand the cardio-respiratory system and its relation to exercise and health	1.1 Explain the following terms in relation to short and long term exercise and the efficiency of the heart: • cardiac cycle • stroke volume • cardiac output	4
	1.2 Explain the effect of disease processes on the structure and function of blood vessels	
	1.3 Describe health risks associated with systolic and diastolic blood pressure classifications	
	1.4 Explain the short and long term effects of cardiorespiratory exercise on: • blood pressure • respiration • venous return • implications of blood pooling	
2. Understand the skeletal system and its relation to exercise	2.1 Explain how bones and bone density are affected by: • the role of osteoblasts and osteoclasts • hormonal contribution • body weight • dietary influences • weight bearing and non-weight bearing exercise • high and low-impact exercise	5
	2.2 Explain factors that affect the stability of joints	
	2.3 Explain potential risks resulting from unstable and dysfunctional joints	
	2.4 Explain how the structure of joints enables them to act as shock absorbers	
	2.5 Explain the bone modelling and remodelling processes	
3. Understand the muscular system and its relation to exercise	3.1 Describe the actions of the major muscles of the body	10
	3.2 Identify the muscle attachment sites (origins and insertions) for the major muscles of the body	
	3.3 Describe joint actions brought about by contraction of specific muscle groups	
	3.4 Describe the role of contributory muscles as: • agonist • antagonist • synergist • fixators	
	3.5 Describe the significance of anatomical axes and planes of movement to muscle balance and function	
	3.6 Explain the effect of the following exercise variables on biomechanics and kinesiology: • first, second and third class levers • centre of gravity • momentum • force • length-tension relationships	

	• open and closed kinetic chain movements	
	3.7 Explain the following principles of muscle contraction in relation to exercise: • concentric and eccentric (isotonic) • isometric and isokinetic • stretch and reverse stretch reflexes • sliding filament theory • size principle of motor unit recruitment	
	3.8 Explain the short and long-term effects of exercise on muscles including: • delayed onset muscle soreness (DOMS) • muscle fatigue • hypertrophy • metabolic benefits	
	3.9 Describe the response of muscles to: • overuse • underuse • misuse	
4. Understand postural and core stability	4.1 Describe the structure and function of: • 'core' muscles • stabilising ligaments of the spine	6
	4.2 Explain the classification of core muscles including if they are: • 'local/deep' • 'global/superficial'	
	4.3 Describe the structure and function of intervertebral discs	
	4.4 Explain the effects of abdominal adiposity and poor posture on movement efficiency	
	4.5 Describe abnormal degrees of curvature of the spine and their implications for physical activity	
	4.6 Explain the impact of core stabilisation exercise including the potential for injury and aggravation of problems	
5. Understand the nervous system and its relation to exercise	5.1 Explain the function, in relation to exercise, of: • the central nervous system (CNS) • the Peripheral Nervous System (PNS) including somatic and autonomic systems	7
	5.2 Describe nervous control and transmission of a nervous impulse	
	5.3 Explain the process of motor unit recruitment including the: • significance of a motor unit's size • number of muscle fibres	
	5.4 Explain the function of muscle proprioceptors including muscle spindles and Golgi tendon organs	
	5.5 Describe the relevance of proprioceptors to exercise, to include: • the stretch reflex • reciprocal inhibition (inverse stretch reflex) • the 'stretch-shortening cycle' and its application to plyometric training	

	5.6 Explain the neuromuscular adaptations associated with training, to include: • more efficient motor unit recruitment • improved inter-muscular coordination • improved intramuscular coordination	
	5.7 Explain the benefits of improved neuromuscular coordination to exercise performance	
6. Understand the endocrine system and its relation to exercise and health	6.1 Describe the structure of the endocrine system, including both glands and hormones	4
	6.2 Explain the main functions of the following hormones: • Human Growth Hormone (HGH) • Thyroxine • Parathyroid hormone • Corticosteroids • Adrenaline and noradrenaline (catecholamines) • Insulin • Glucagon • Oestrogen • Testosterone	
	6.3 Explain typical hormonal responses to: • training • overtraining	
	6.4 Describe signs and symptoms of overtraining	
7. Understand energy systems and their relation to exercise	7.1 Explain how the energy systems function independently and interact with one another	4
	7.2 Describe ATP re-synthesis	
	7.3 Explain aerobic and anaerobic thresholds and their significance in the planning of training programmes	
	7.4 Explain the effects of different training methods on energy systems	