Level 3 Advanced Technical Extended Diploma in Land and Wildlife Management (1080) (Fisheries) (0173-37)

November 2017 Version 1.1

Guide to the examination

Who is this document for?

This document has been produced for centres who offer **City & Guilds Level 3 Advanced Technical Extended Diploma in Land and Wildlife Management (1080) (Fisheries).** It gives all of the essential details of the qualification's external assessment (exam) arrangements and has been produced to support the preparation of candidates to take the exam/s.

The document comprises four sections:

1. **Details of the exam**. This section gives details of the structure, length and timing of the exam.
2. **Content assessed by the exam.** This section gives a summary of the content that will be covered in each exam and information of how marks are allocated to the content.
3. **Guidance.** This section gives guidance on the language of the exam, the types of questions included and examples of these, and links to further resources to support teaching and exam preparation.
4. **Further information.** This section lists other sources of information about this qualification and City & Guilds Technical Qualifications.

1. Details of the exam

External assessment

City & Guilds Technical qualifications have been developed to meet national policy changes designed to raise the rigour and robustness of vocational qualifications. These changes are being made to ensure our qualifications can meet the needs of employers and Higher Education. One of these changes is for the qualifications to have an increased emphasis on external assessment. This is why you will see an external exam in each of our Technical qualifications.

An external assessment is an assessment that is set and/or marked by the awarding organisation (ie externally). All City and Guilds Technical qualifications include an externally set and marked exam. This must be taken at the same time by all candidates who are registered on a particular qualification. We produce an exam timetable each year. This specifies the date and time of the exam so you can plan your delivery, revision and room bookings/PC allocation in plenty of time.

The purpose of this exam is to provide assurance that all candidates achieving the qualification have gained sufficient knowledge and understanding from their programme of study and that they can independently recall and draw their knowledge and understanding together in an integrated way. Whilst this may not be new to you, it is essential that your learners are well prepared and that they have time to revise, reflect and prepare for these exams. We have produced a Teaching, Learning, and Assessment guide that you should refer to alongside the present document *(Teaching, Learning and Assessment Guide).* If a learner does not pass the exam at their first attempt, there is only one opportunity to resit the exam, so preparation is essential.

Exam requirements of this qualification

- Land and Wildlife Management – Theory exam (1) (2 hours)
- Land and Wildlife Management – Theory exam (2) (2 hours).

The exam is graded and a candidate must achieve at least a Pass grade in order to be awarded the qualification. (In addition to the exam, a synoptic assignment must also be completed and passed). You can find full details of the synoptic assignment in the *Qualification Handbook* and the *Synoptic Assessment Guide* – please see the link to the qualification page at the end of this document.

When does the exam take place?

The exam is offered on two fixed dates in March or June. The exact dates will be published at the start of the academic year in the *Assessments and Exam Timetable* *http://www.cityandguilds.com/delivering-our-qualifications/exams-and-admin*.

At the start of the programme of study, in order to effectively plan teaching and exam preparation, centres should know when the exam will be taking place and allocate teaching time accordingly. Section 2 of this document gives a summary of the content that needs to be covered in order to prepare learners for the exam and full details of this are given in the Qualification Handbook.

Form of exam

The exam for this qualification can be taken either on paper (0173-513) or online (0173-013).

Can candidates resit the exam?

Candidates may resit the exam once only. If a candidate fails the exam both on the first attempt and when resitting it, that candidate has failed the qualification and cannot achieve it in that academic year.

How the exam is structured

Each exam has a total of 60 marks and is made up of:

- approximately 12-15 short answer questions
- 1 extended response question.

Short answer questions are used to confirm **breadth of knowledge and understanding**.

The extended response question is to allow candidates to demonstrate **higher level and integrated understanding** through written discussion, analysis and evaluation. This question also ensures the exam can differentiate between those learners who are 'just able' and those who are higher achieving.

More details about and examples of question types are given in Section 3 of this document.

Assessment Objectives

The exams are based on the following set of assessment objectives (AOs). These are designed to allow the candidate's responses to be assessed across the following three categories of performance:

- **Recollection** of knowledge.
- **Understanding** of concepts, theories and processes.
- **Integrated application** of knowledge and understanding.

In full, the assessment objectives covered by the exam for this qualification are:

Assessment objective *The candidate..*	Mark allocation (approx %)
AO1 **Recalls knowledge** from across the breadth of the qualification.	30%
AO2 **Demonstrates understanding** of concepts, theories and processes from across the breadth of the qualification.	50%
AO4 **Applies knowledge, understanding and skills** from across the breadth of the qualification in an integrated and holistic way to achieve specified purposes.	20%

Booking and taking the exam

All assessments for City & Guilds Technical Exams must be booked through Walled Garden. There is a deadline for booking exams, synoptic assessments and any other centre marked assessments, please refer to the time line to check these dates.

The exam must be taken under the supervision of an invigilator who is responsible for ensuring that it is conducted under controlled conditions. Full details of the conditions under which the exam must be taken can be found in the Joint Council for Qualifications (JCQ) document, *Instructions for Conducting Examinations (ICE)*.

Special consideration

Candidates who are unable to sit the exam owing to temporary injury, illness or other indisposition at the scheduled time may qualify for special consideration. This is a post-examination adjustment that can, in certain circumstances, be made to a candidate's final grade. The Joint Council for Qualifications' guide to the special consideration process can be found at www.jcq.org.uk.

To make a request for special consideration, please contact: policy@cityandguilds.com

Access arrangements

Access arrangements are arrangements that allow candidates with particular requirements, disabilities or temporary illness to take assessments, where appropriate, using their normal way of working. The Joint Council for Qualifications document, *Access Arrangements and Reasonable Adjustments* gives full details and can be downloaded here.

For further information and to apply for access arrangements please see:

Access arrangements - When and how applications need to be made to City & Guilds

Applying for access arrangements on the Walled Garden

2. Content assessed by the exam

The exam assesses:

- Unit 306: Principles of physical and biological environmental processes
- Unit 312: Fish biology
- Unit 344: Fish health

Each exam assesses a sample of the content of these units. This means that a single exam will **not** cover 100% of the unit content. The full range of content will be assessed over a number of examination series. Details of the coverage of a particular exam paper will **not** be released in advance of the exam itself. Centres should **not** make assumptions about what will be assessed by a particular exam based on what has been covered on previous occasions. In order to be fully prepared for the exam, learners **must** be ready to answer questions on **any** of the content outlined below.

The table below provides an overview of how the qualification's Learning Outcomes are covered by each exam and the number of **marks** available per Learning Outcome (ie **not** the number of *questions* per Learning Outcome). In preparing candidates for the exam, we recommend that centres take note of the number of marks allocated to Learning Outcomes and to assign teaching and preparation time accordingly.

In preparing candidates for the exam, centres should refer to the Qualification Handbook which gives full details of each Learning Outcome.

The following is a summary of only that qualification content which is assessed by the exam and **not** a summary of the full content of the qualification.

Unit	Learning outcome	Topics	Number of marks
306 Principles of physical and biological environmental processes	L01 Recognise the scientific principles and processes that influence weather and climate	1.1 Weather and climate 1.2 Water and hydrological cycle	20
	LO2 Know the physical and biological processes within the lithosphere	2.1 Origins and characteristics of rocks 2.2 Factors affecting soil composition and formation 2.3 The distrivution of major rock and soil types found in the British Isles	
	LO3 Understand the biological processes within the biosphere	3.1 Biotic 3.2 Energy transfers in plants and animals	
	LO4 Relationship between environmental processes and land use	4.1 Land cover 4.2 Land use 4.3 Future land use	
312 Fish biology	LO1 Understand the external and internal anatomy of fish	1.1 External features and functions of a fish 1.2 Internal features and functions of a fish	14
	LO2 Understand the main processes of fish physiology	2.1 Function of physiological systems and sensory organs 2.2 Impact of environment on the physiological systems of fish	
	LO3 Understand the main processes of fish behaviour	3.1 Normal behaviour in fish 3.2 Abnormal behaviour in fish	
	LO4 Understand the main processes of fish nutrition	4.1 Principles of fish nutrition 4.2 Fish feeding regimes	

344 Fish health	LO1Understand the causes, symptoms and management of viral and bacterial diseases in fish	1.1 Viral infections 1.2 Bacterial infections	14
	LO2 Understand the causes, symptoms and management of fungal and parasitic diseases in fish	2.1 Fungal infections 2.2 Parasitic infections	
	LO3 Understand the causes and management of nutritional and environmental health problems in fish	3.1 Nutritional health problems 3.2 Environmental health problems	
	LO4 Know the relevant codes of practice and legislation relating to the management of fish health in the UK	4.1 EU and UK legislation covering the management of fish health in the UK	
		Total marks for sections:	48 marks
		Integration across units*:	12 marks
		Total marks for exam:	**60 Marks**

** Integration across units.* These marks relate to Assessment Objective 4. These marks are awarded to differentiate between levels of performance by candidates taking the exam. The marks are given for how well a candidate has applied their knowledge, understanding and skills from across the units that make up the qualification in an integrated way to meet the requirements of the exam questions.

3. Guidance

Vocabulary of the exam: use of 'command' verbs

The exam questions are written using 'command' verbs. These are used to communicate to the candidate the type of answer required. Candidates should be familiarised with these as part of their exam preparation.

The following guidance has been produced on the main command verbs used in City & Guilds Technicals exams.

A more detailed version of this table, which also includes the command verbs used in the assignments is published in *City & Guilds Technical Qualifications Teaching, Learning and Assessment* guide.

Command verb	Explanation and guidance
Analyse	Study or examine a complex issue, subject, event, etc in detail to explain and interpret, elements, causes, characteristics etc
Calculate	Work out the answer to a problem using mathematical operations
Compare (…and contrast) (or *describe* the similarities/differences)	Consider and describe the similarities (and differences) between two or more features, systems, ideas, etc
Define	Give the meaning of, technical vocabulary, terms, etc.
Describe	Give a detailed written account of a system, feature, etc **(..the effect of…on…)** the impact, change that has resulted from a cause, event, etc **(..the process..)** give the steps, stages, etc
Differentiate between	Establish and relate the characteristic differences between two or more things, concepts, etc
Discuss	Talk/write about a topic in detail, considering the different issues, ideas, opinions related to it
Distinguish between	Recognise and describe the characteristic differences between two things, or make one thing seem different from another
Evaluate	Analyse and describe the success, quality, benefits, value, etc (of an end product, outcome, etc)
Explain	Make (a situation, idea, process, etc) clear or easier to understand by giving details **(..how..)** Give the stages or steps, etc in a process, including relationships, connections, etc between these and causes and effects.

Give example(s) illustrate/	Use examples or images to support, clarify or demonstrate, an explanation, argument, theory, etc
Give a rationale	Provide a reason/reasons/basis for actions, decisions, beliefs, etc
Identify	Recognise a feature, usually from a document, image, etc and state what it is
Justify	Give reasons for, make a case for, account for, etc decisions, actions, conclusions, etc, in order to demonstrate why they suitable for or correct or meet the particular circumstances, context
Label	Add names or descriptions, indicating their positions, on an image, drawing, diagram, etc
List	Give as many answers, examples, etc as the question indicates (candidates are not required to write in full sentences)
Name	Give the (technical) name of something
Propose	Present a plan, strategy, etc (for consideration, discussion, acceptance, action, etc).
Select	Choose the best, most suitable, etc, by making careful decisions
State	Give the answer, clearly and definitely
Summarise	Give a brief statement of the main points (of something)

Question types

The following explains, and gives examples of, types of questions used in City & Guilds Technical exams. In preparing candidates to take the exam, it is recommended that you familiarise them with the requirements of each question type so that they can be effective and make best use of the time available when sitting the exam.

- An effective candidate will gauge the type and length of response required from the question and the number of marks available (which is given for each question on the exam paper).
- Short answer questions may not require candidates to write in complete sentences. Extended response questions will require a more developed response.
- Candidates should read the exam paper before attempting to answer the questions and should allocate time proportionate to the number of marks available for each question or section.

Question type:	Example question	Example question:
Short answer questions (restricted response) These are questions which require candidates to give a brief and concise written response. The number of marks available will correspond to the number of pieces of information/examples and the length of response required by the question.	Give **two** examples of land cover. (2 marks)	ANSWER Forest Wetland Grassland Mountains Rivers lakes Any other appropriate answer
Structured Response Questions These are questions that have more than one part (eg a), b), etc.). The overall question is made up of linked, short answer questions which move the candidate through the topic in a structured way. For example, the question will usually start with a 'recall'/'state'/ 'describe'	a. List **two** UK legislations covering the management of fish health. (2 marks) b. Give **two** aims for each of the legislations listed in 5a. (4 marks)	ANSWER a. 1 mark for each (up to 2 marks) Diseases of Fish Act 1983 Salmon and Fresh water Fisheries Act 1975 Animal Welfare Act 2006 Aquatic Animal Health (England and Wales) Regulations 2009

question followed by an 'explain' to draw out understanding of the topic. They usually have a shared introductory 'stem', and the number of marks may increase through the question.

Accept other UK legislations covering fish health

b. 2 marks for each legislation.

Eg: Animal welfare act 2006 – to improve welfare of animals, to impose greater responsibility on the carer, to ensure animals are protected from harm, to ensure animals have access to natural habitat etc.

Any other appropriate responses – correct aims should be given for the correct legislation.

Extended response questions

Extended response questions are those that require the candidate to write a longer written response using sentences and paragraphs. These usually require candidates to discuss, explain, etc. a topic in some detail. The question is often based on a short case study, scenario or other prompt. The level of detail should be gauged from the question and the number of marks available.

Example question

During summer, anglers have reported to the fishery manager at a sports fishery, that they have noticed a number of fish gasping at the surface. The fish manager is also concerned about the high fish mortality rate at the fishery.

Discuss the potential environmental factors causing these health issues and how this can be managed.

ANSWER

Indicative content

- Summer – high temperature,
- Less oxygen available
- Angling activity in the area- creates angling pressure
- Deteriorates water quality
- increased stress
- lowers immune system
- these factors affect fish health
- Increased susceptibility to infection
- Aeration to manage low oxygen
- Reducing anglers
- Reduce stocking densities
- Increase flow rates in the water body

Band 1: 1 – 4 marks

Basic description, stating some examples of environmental factors that have negative effect on fish health. The response strays away from the information in the scenario. There is little attempt on suggesting management methods to control these environmental issues. There will be little or no specialist terminology used. Answer may be disorganised and ambiguous.

Example band 1 response

As fish are being seen at the surface they will be more attractive to predators and this may cause the high fish mortally. Depending on the fish stocking levels and the summer heat, there will be less water in the lakes due to evaporation and so less oxygen to share. You could pump more water in to top up the lake and clear any duck weed off the surface to allow light in to create more oxygen.

Band 2: 5 – 8 marks

Detailed description, demonstrating a sound understanding of environmental factors that have negative effect on fish health. The response draws information from the scenario to discuss the main factors and effects. There are some basic suggestions on management methods to control these environmental issues. There will be some use of specialist terminology, although they may not always be used appropriately. The information is presented mostly in a structured format.

Example band 2 response

With fish seen at the surface gasping for air, and with many fish dying, this could be down to not enough dissolved oxygen in the water. The causes of this could be to the warmer water caused by the sun and due to this the water holds less oxygen. This, coupled with high stocking levels and active fish due to the pressure of fishing, lessens the oxygen available. With fish under stress, they are going to be more likely to get diseases. This would result in a higher than average mortality. It therefore is important to raise the oxygen levels by aeration, putting in a bubbler. With large fish deaths, the lake will need to be restocked to keep the punters happy to fish in the lake.

Band 3: 9 – 12 marks

Comprehensive description of the environmental factors that have negative effect on fish health. Articulate ability to link response to the details in the scenario. Detailed reasoning for the suggestions on management methods to control these environmental issues. Specialist terminology will be used correctly and appropriately throughout. Information will be presented in a well-structured format.

Example band 3 response

The low oxygen levels more than likely will have be the result of the warm summer temperature as increased temperature reduces the amount of oxygen within an aquatic body. This coupled with the likely high stocking densities and increased angling pressures the fish are facing can lead to higher mortality rates. Aquatic species are susceptible to stress living in these conditions which in turn weakens their immune system allowing them to become immuno suppressed thus allowing previously manageable diseases to take hold. To overcome this problem water quality should be checked on a regular basis paying particular attention to ammonia, pH and temperature. Stocking densities should be reduced where possible and aerators should be added. It would also be worthwhile considering increasing the freshwater flow to the water body to help dilute any pollutant build ups and to provide a constant supply of well oxygenated water. It would be in the fishery owner's best interest to also minimise the number of anglers using the lake during this time. If mortalities continue after making these alterations, a suitable sample of specimens should be sent to Environment Agency labs for pathogen and parasite testing. Periodic nettings of the lake to carry out population surveys would be recommended moving forward.

Examination technique

Candidates with a good understanding of the subject being assessed can often lose marks in exams because they lack experience or confidence in exams or awareness of how to maximise the time available to get the most out of the exam. Here is some suggested guidance for areas that could be covered in advance to help learners improve exam performance.

Before the exam

Although candidates cannot plan the answers they will give in advance, exams for Technical qualifications do follow a common structure and format. In advance of taking the exam, candidates should:

- be familiar with the structure of the exam (ie number and type of questions).
- be aware of the amount of time they have in total to complete the exam.
- have a plan, based on the exam start and finish time for how long to spend on each question/section of the exam.
- be aware of how many marks are available for each question, how much they should expect to write for each question and allow most time for those questions which have the most marks available.

At the start of the exam session

At the start of the exam, candidates:

- should carefully read through the instructions before answering any questions.
- may find it helpful, where possible, to mark or highlight key information such as command words and number of marks available on the question paper.
- identify questions which require an extended written answer and those questions where all or part of the question may be answered by giving bullets, lists etc rather than full sentences.

Answering the questions

Candidates do not have to answer exam questions in any particular order. They may find it helpful to consider, for example:

- tackling first those questions which they find easiest. This should help them get into the 'flow' of the exam and help confidence by building up marks quickly and at the start of the exam.
- tackling the extended answer question at an early stage of the exam to make sure they spend sufficient time on it and do not run out of time at the end of the exam.

Candidates should avoid wasting time by repeating the question either in full or in part in their answer.

Candidates should **always** attempt every question, even questions where they may be less confident about the answer they are giving. Candidates should be discouraged however, from spending too long on any answer they are less sure about and providing answers that are longer and give more detail than should be necessary in the hope of picking up marks. This may mean they have less time to answer questions that they are better prepared to answer.

Extended answer questions

Before writing out in full their answer to extended questions, candidates may find it helpful to identify the key requirements of the question and jot down a brief plan or outline of how they will answer it. This will help clarify their thinking and make sure that they don't get 'bogged down' or provide too much detail for one part of the question at the expense of others.

Towards the end of the exam

Candidates should always set aside time at the end of the exam to read back through and review what they have written in order to make sure this is legible, makes sense and answers the question in full.

If a candidate finds they are running out of time to finish an answer towards the end of the exam, they should attempt to complete the answer in abbreviated or note form. Provided the content is clear and relevant, examiners will consider such answers and award marks where merited.

Further guidance on preparing candidates to take the exam is given in the City & Guilds publication, Technical Qualifications, Teaching, Learning and Assessment which can be downloaded free of charge from City & Guilds website.

4. Further information

For further information to support delivery and exam preparation for this qualification, centres should see:

City & Guilds

Qualification homepage: http://www.cityandguilds.com/qualifications-and-apprenticeships/land-based-services/environment-countryside-and-conservation/0173-technicals-in-land-wildlife-management#tab=documents which includes:

- Qualification handbook
- Synoptic Assignment
- Sample assessments

Technical Qualifications, Resources and Support: www.cityandguilds.com/techbac/technical qualifications/resources-and-support

Joint Council for Qualifications

Instructions for Conducting Examinations: http://www.jcq.org.uk/exams-office/ice---instructions-for-conducting-examinations