Level 1 - Unit 103 - Digital Modelling (4 credits)

Relevant LINKS

BACK TO ITQ UNITS **[1]**

Handbook home page **[2]**

Overview

Digital Modelling at Silver Level requires the candidate to use a modelling application to create some work. This process will require candidates to identify the numerical data required and to enter and check its accuracy. They will need to use correct methods and procedures and get feedback to improve and enhance the model. They will then need to make a presentation based on the findings of the model and work on the feedback given in a professional way

A work activity will typically be 'straightforward or routine' because:

The task or context will be familiar and involve few variable aspects. The techniques used will be familiar or commonly undertaken.

Example of context – Creating a budgeting system for a local charity or company as per their requirements. The idea of digital modelling here is used in a very broad sense as a building created on a comuter, or a piece of furniture, or indeed a musical jingle, are all digital models of something analogue. This gives more scope to explore a range of applications in different subject areas, though most students will model numerical data in a spreadsheet.

Assessor's guide to interpreting the criteria

General Information

QCF general description for Level 1 qualifications

- Achievement at QCF level 1 (EQF Level 2) reflects the ability to use relevant knowledge, skills and procedures to complete routine tasks. It includes responsibility for completing tasks and procedures subject to direction or guidance.
- Use knowledge of facts, procedures and ideas to complete well-defined, routine tasks. Be aware of information relevant to the area of study or work
- Complete well-defined routine tasks. Use relevant skills and procedures. Select and use relevant information. Identify whether actions have been effective.
- Take responsibility for completing tasks and procedures subject to direction or guidance as needed

Requirements

- Standards must be confirmed by a trained Silver Level Assessor or higher

- Assessors must at a minimum record assessment judgements as entries in the on-line mark book on the INGOTs.org certification site.

- Routine evidence of work used for judging assessment outcomes in the candidates' records of their day to day work will be available from their e-portfolios and on-line work. Assessors should ensure that relevant web pages are available to their account manager on request by supply of the URL.

- When the candidate provides evidence of matching all the criteria to the specification subject to the guidance below, the assessor can request the award using the link on the certification site. The Account Manager will request a random sample of evidence from candidates' work that verifies the assessor's judgement.

- When the Account Manager is satisfied that the evidence is sufficient to safely make an award, the candidate's success will be confirmed and the unit certificate will be printable from the web site.

- This unit should take an average level 1 learner 30 hours of work to complete.

Assessment Method

Assessors can score each of the criteria L, S, H. N indicates no evidence and is the default starting position. L indicates some capability but secure capability has not yet been achieved and some help is still required. S indicates that the candidate can match the criterion to its required specification. H indicates performance that goes beyond the expected in at least some aspects. Candidates are required to achieve at least S on all the criteria to achieve the unit. Candidates should be helped and encouraged to reference their work to the assessment criteria using assessment for learning process. e.g. IPU 1.1.2 for IPU Level 1 criterion 1.2. This will make it easier to provide the evidence required for the QA procedures when requested by the Account Manager. There is support for this from learner account profiles on the INGOT web site. PLTS is used to denote where there are opportunities to develop personal learning and thinking skills.

Expansion of the assessment criteria

1. The candidate will use a modelling application to edit and organise data

1.1 I can set up a structure for a model to meet needs

Candidates should be able to create a basic working model to solve a problem or demonstrate a set of functions.

Evidence: from files created by the candidate and documentation in web pages.

Additional information and guidance

Candidates might describe the type of model they are working towards with some idea about how they can collect the required data to make the model and how it might be presented. A model in this sense is a system that can collect numerical data in order to make charts and graphs to make decisions. For example, a model for a local club might collect all the subscription money or any money spend on facilities. The model can then be used to answer questions like, "how much money did we collect from new members last ear", or "how much did we spend on the vending machine and

how much profit did we make". A simple spreadsheet should be able to do all of this easily.

1.2 I can identify what numerical and other information is needed

Candidates should show an understanding of working with numerical data. The data should be appropriate for the task with the capacity to provide the basis for a realistic model.

Evidence: from spreadsheet files created by the candidate and documentation in web pages.

Additional information and guidance

Candidates might describe the type of numerical data they require, with some idea about how to collect it and organise it. It might be dimensions in a visual model or prototype, data and formulae in a spreadsheet or database model. At Level 1 the mathematical demand should be in keeping with Level 1 mathematics and pupils might be presented with models using very different tools e.g. a spreadsheet, a 2D vector graphic diagram or a 3D building design.

1.3 I can enter and edit numerical and other data accurately

Taking account of evaluation of the data and initial analysis they should show capability of efficiently entering and editing data associated with the model.

Evidence: from spreadsheet files created by the candidate and documentation in web pages.

Additional information and guidance.

This work can be linked to other criteria relevant to finding and eliminating errors and on-going quality assurance. Ensuring the data is fit for purpose in their proposed model, eliminating errors with guidance is expected. In all but the simplest cases at Level 1 structured guidance will be required. if they can handle more complexity largely self sufficiently it is an indicator of Level 2 performance.

1.4 I can store and retrieve models effectively, in line with local guidelines and conventions where available

The candidate should organise their files appropriately and self- sufficiently storing them and retrieving them routinely.

Evidence: from observation, their files and web pages.

Additional information and guidance

Candidates should be able to show that they can both create and retrieve their models and use the local naming conventions and guidelines available, such as creating areas or folders for each piece of work.

2. The candidate will use appropriate tools, methods and feedback to build a model

2.1 I can follow instructions to input information

The candidate should be able to demonstrate the ability to input data accurately, with instruction, to ensure it is correct for the model.

Evidence: from observation, their files and web pages.

Additional information and guidance

Candidates should be made aware of the fact that data that is wrong going in, is wrong coming out. The more accurate they are with data input, the better the results will be. They should also use a

variety of input methods to show different types of numerical data where possible: for example dates, times, currency etc.

2.2 I can select and implement tools that make the model functional

The candidate should be able to demonstrate the ability to use a range of tools within the chosen system to meet the requirements of their specified model.

Evidence: from observation, their files and web pages.

Additional information and guidance

Candidates should use a range of elements, for example, if using a spreadsheet, they could use some conditional statements, or they may choose certain types of graphs or charts to make information clearer. They can use colour coding of tabs to make certain information easier to find.

If using animation software, the use of more sound and movement functions will enhance the performance. These will be in keeping with the Level 1 RQF descriptor.

2.3 I can obtain feedback on the model

The candidate should have some evidence of basic feedback on their model before finalising it.

Evidence: from observation and peer review on their web pages.

Additional information and guidance

Some level of peer review would be useful for the candidates to get a sense of how effective and accurate their model is, as well as if it is usable by someone else, therefore meeting other design considerations such as ease of use. The principle of peer review and consensus is important in many aspects of rational approaches to problems. In many cases for L1, this will be from the assessor.

2.4 I can use feedback to improve the model

The candidate should show that they have received some feedback and acted upon it to improve their model in some areas.

Evidence: from observation and personal reflection on their web pages.

Additional information and guidance

Getting user feedback on projects is a vital part of the development process and candidates should be encouraged to get as much feedback as possible into different aspects of their model and show that they can use this information to improve their design further. Maybe they were told that the font used was too hard to read ot perhaps they used the wrong type of graph for an output.

3. The candidate will present a model to an audience

3.1 I can select and use appropriate tools and techniques to prepare a model for presentation

Candidates should plan the presentation of their models to make the information easy to use by the intended audience.

Evidence: from the files and presentation they produce.

Additional information and guidance

The model the candidates create should guide them to the best way to present the working model to

an audience and they can then work accordingly with the tools to show off their work in the best way. This might be by logically structuring e.g. spreadsheets to summarise different views of the data or providing different views of a visual prototype.

3.2 I can present a model and explain its purpose

Candidates should be able to present their working model and explain to an audience what it does and why.

Evidence: from the files and presentation they produce.

Additional information and guidance

Candidates need the opportunity to present their model and allow for some questions from the audience to allow them to highlight the best features and explain the purpose for their chosen functions and features. At Level 1 they will need some support in rehearsing their explanation. **This can be used in conjunction with the presentation unit.**

3.3 I can receive feedback graciously

Candidates should be able to accept feedback from an audience in a gracious way and take on board anyone's legitimate criticisms of their work.

Evidence: Assessor observation and from reflections on their portfolio or blog.

Additional information and guidance

It is generally not easy to take criticism of something you have worked hard at, but candidates need to understand and accept that everyone tackles problems differently and they need to respect other people's comments and expect other people to respect theirs. At Level 1 this might require constant reassurance and support. At Level 2 they should be becoming more routinely able to accept criticism.

3.4 I can evaluate the finished work in relation to intentions

Candidates should be able to show clearly that they can see the strengths and weaknesses of their model and match these to some initial design intentions they set themselves.

Evidence: Assessor observation and from reflections on their portfolio or blog.

Additional information and guidance

Candidates should be able to offer some evaluation of their work, although they may need a framework to use as reference until they master this skill. The evaluation should help them design the system more effectively next time. There is no such thing as a perfect system, so they should be encouraged that they got theirs working to a certain standard.

3.5 I can assign a copyright license to finished work

Candidates should be able to apply a license to their finished work.

Evidence: Candidate work or assessor statement that it was discussed as a group.

Additional information and guidance

Candidates need to be introduced to copyright licenses and how to obtain information about these via the Internet. For example, they should make a declaration that they licensed their work for free use and that it is their own work and any sources of information are referenced to their owner. They should not use copyright tools or information without first gaining permission (or have it provided

directly in the license). Any further local constraints can be included in this work but some description of the AUP and copyright should be present. There is no need to have a detailed understanding of very complex terms and conditions at Level 1. At this stage an overview of the main purpose and key requirements is sufficient. They should appreciate that copyright is automatically assigned to them for any original work and that they can license their work in any way they please as a result.

Moderation/verification

The assessor should keep a record of assessment judgements made for each candidate guided by the above guidance. Criteria should be interpreted in the context of the general descriptors of QCF Level 1 qualifications. They should make notes of any significant issues for any candidate and be in a position to advise candidates on suitable routes for progression. They must be prepared to enter into dialogue with their Account Manager and provide their assessment records to the Account Manager through the on-line mark book. They should be prepared to provide evidence as a basis for their judgements through reference to candidate e-portfolios. Before authorising certification, the Account Manager must be satisfied that the assessors judgements are sound. In the event of missing evidence, the assessor will be requested to gather appropriate information before the award can be made.

Links
[1] http://theingots.org/community/ITQ_unit_development
[2] https://theingots.org/community/handbook2