L3 Computing - Unit 3 - Delivering a Software Project

Relevant LINKS

BACK TO COMPUTING UNITS **[1]**

Handbook home page **[2]**

Overview

Computer Science at Platinum Level requires the candidate to completely understand and describe the basic planning and implementation procedures for a successful project, as well as an awareness of quality assuance and feedback mechanisms to ensure the project meets the customer needs. As a result of reviewing their work, they will be able to identify and use automated methods or alternative ways of working to improve programming and using computers. Unfamiliar aspects will require support and advice from other people.

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 – designing, planing, implementing and testing a program for controlling a physical system or solving a complex problem.

Support for the assessment of this award

Example of typical Computing work at this level (Coming Soon)

Assessor's guide to interpreting the criteria

General Information

QCF general description for Level 3 qualifications

- Achievement at Level 3 (EQF Level 4) reflects the ability to identify and use relevant understanding, methods and skills to complete tasks and address problems that, while well defined, have a measure of complexity. It includes taking responsibility for initiating and completing tasks and procedures as well as exercising autonomy and judgment within limited parameters. It also reflects awareness of different perspectives or approaches within an area of study or work.
- Use factual, procedural and theoretical understanding to complete tasks and address problems that, while well defined, may be complex and non-routine.
- Identify, select and use appropriate skills, methods and procedures.
- Use appropriate investigation to inform actions.
- Review how effective methods and actions have been.
- Take responsibility for initiating and completing tasks and procedures, including, where relevant, responsibility for supervising or guiding others.
- Exercise autonomy and judgement within limited parameters information and ideas.

Requirements

- Standards must be confirmed by a trained Level 3 Assessor or higher.
- Assessors must at a minimum record assessment judgements as entries in the online 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 online 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.
- Each unit at Level 3 has recommended guided learning hours based on time required to complete by an average learner.

Assessment Method
Assessors can score each of the criteria N, L, S or H. N indicates no evidence and it is the default setting. L indicates some capability but some help still required to meet the standard. S indicates that the candidate can match the criterion to its required specification in keeping with the overall level descriptor. 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 full unit award.

Expansion of the assessment criteria

1. The candidate will plan a suitable project

1.1 I can identify an area of interest and scope the project

Candidates should collate a range of information gathered in other parts of the course and use it and any other background to inform their decisions.

Evidence: Assessor observations and portfolios.

Additional information and guidance

It is probably advisable to have an initial planning and preparation phase in the first half of the course and start work on the main project around the mid point or a little before. This will give time for evidence gathering and practice of techniques in the context of small scale projects to help inform planning. A successful project is very likely if the preparation is sound.

1.2 I can agree and adopt the software development method.

Candidates should use background learning to decide on their approach and agree it with their assessor or mentor.

Evidence: Assessor observations, portfolios.

Additional information and guidance

The assessor or mentor should act as guides to ensure that the candidate does not set off on an unrealistic route that could jeopardise the entire project. Candidates should have realistic input and once agreed need to show appropriate commitment to the method.

1.3 I can present the proposal to critical experts.

Candidates should prepare a presentation of their agreed proposal and methods and present it to a

critical independent person(s).

Evidence: documented presentation in portfolios.

Additional information and guidance

Once the project outline and method is agreed, candidates should use it as a basis for a presentation to a critical third party that has knowledge and experience in the field. The presentation does not have to be physical, it could be by web cast or web video conference e.g. Google Hangouts or Skype.

1.4 I can make modifications as a result of feedback.

Candidates should be able to use the feedback from the expert source to make improvements to their proposal.

Evidence: from documentation in portfolios.

Additional information and guidance

Improvements might be in the software tools, in the scope of the project or implementation methods. In some cases there might be little to do as there is no point it making modifications for the sake of it. Whatever the case there should be clear evidence that consideration was given to the findings of the consultation.

1.5 I can meet deadlines.

Candidates should be able to estimate milestones in the project and once committed to them meet the deadlines.

Evidence: from assessor observations, project portfolio evidence of timings.

Additional information and guidance

Candidates should be familiar with SMART targets and the need to consider deadlines and ensure they are met. If in the assessor’s judgement a deadline was missed through no fault of the student it can be ignored. If on the other hand, the student is simply being lazy or disorganised a warning should be given and there should be clear evidence of a real effort to get things back on track. The final deadline is project completion and if it is not achieved at least in some useful form their should be a very good reason.

2. The candidate will carry out a significant practical software project

2.1 I can produce substantial code that works effectively

The aim should be to produce high quality well documented code that is consistent with 100 hours of work including their planning and consultation.

Evidence: from assessor observations, software application and its documentation in portfolios.

Additional information and guidance

There is no guide such as lines of code produced because we do not want to encourage producing software that is inefficient just to meet a lines quota. Assessors and candidates should be constantly reviewing productivity and the time spent producing. Peer review could be helpful here in determining what has been achieved. For particularly good projects we will provide additional recognition outside the scope of the qualification and candidates should realise that being able to demonstrate a high quality useful software application might have as much or more weight with an

employer or university admissions tutor as the qualification certificate.

Assessors should ensure that the actual coding is the candidate's own work. Mentors and assessors can provide guidance and advice but they should NOT provide code. If candidates use source code e.g. from an Open Source application they should reference it and acknowledge the source in the same way as with book references. They should make it clear which is their own work and which was other peoples'. In this way more than one student could work on the same project.

2.2 I can produce source code that has effective embedded documentation.

Candidates should document their source code with embedded comments at least well enough to for a technically knowledgeable person to follow.

Evidence: from documented source code in portfolios.

Additional information and guidance

There is a school of thought that embedded documentation is all that should be needed. Whether or not this is the case, the documentation should be good enough on its own to see what the program is doing.

2.3 I can use logical techniques to debug code.

Candidates should demonstrate techniques such as control of variables and program breaks to isolate bugs.

Evidence: Documentation of methods in portfolios.

Additional information and guidance

Assessors should provide guidance in strategies for isolating bugs and providing useful error messages.

2.4 I can show courage and determination to overcome problems.

The candidate will provide evidence of courage and perseverance in overcoming adversity.

Evidence: from assessor observations and documents in portfolio.

Additional information and guidance

Candidates should be able to demonstrate that they have made real efforts to overcome problems that they find difficult. This means that able candidates might well need to go beyond basic level 3 work to demonstrate this characteristic. It would be a good idea for candidates to keep diaries in their portfolios so that they can record evidence of the need for courage and determination as it arises.

2.5 I can test code regularly with third parties.

The candidate will make testing a routine part of development.

Evidence: from assessor observations and documents in portfolio.

Additional information and guidance

Candidates should involve peers, mentors and assessors in the testing process and respond positively to any feedback. Testing might help eliminate bugs but it might also help improve functionality through user feedback.

3. The candidate will communicate project outcomes to others

3.1 I can provide regular updates on progress to a mentor

Candidates should meet with a mentor at several points in the development process to report on progress.

Evidence: from assessor observations and documents in portfolio.

Additional information and guidance

Candidates keeping diaries should simply record update issues and mentor comments. This could be combined with the testing strategy. The mentor could be the assessor but does not have to be.

3.2 I can analyse issues arising and establish priorities for resolution.

As for the criterion.

Evidence: from assessor observations and documents in portfolio.

Additional information and guidance

Candidates keeping diaries should simply record a brief analysis of any issues arising from feedback from third parties and record actions as a result.

3.3 I can gather opinions through peer review.

Candidates should use regular peer review and provide the same for others

Evidence: from assessor observations and documents in portfolio.

Additional information and guidance

Candidates should contribute to an objective and rational peer review process. They should receive criticism graciously and provide it objectively and sensitively.

3.4 I can use IT tools to enhance communication.

Candidates should use appropriate IT tools to support communication with peers mentors, assessor and other third parties.

Evidence: from assessor observations and documents in portfolio.

Additional information and guidance

Candidates should use a range of collaborative tools to support communication. It is not necessary for all communications to be face to face meetings. Aspects can be by email, video conference, sharing resources etc. Encourage experimentation to go beyond stereotypical Powerpoint slides.

3.5 I can make a final presentation to a critical audience.

Candidates should make a final presentation of their completed project.

Evidence: from assessor observations and documents in portfolio.

Additional information and guidance

Candidates should have the opportunity to make a professional presentation to a suitable audience that is knowledgeable enough to provide fair criticism and feedback.

Moderation/verification
The assessor should keep a record of assessment judgements made for each candidate and make notes of any significant issues for any candidate. They must be prepared to enter into dialogue with their Account Manager and provide their assessment records to the Account Manager through the online mark book. They should be prepared to provide evidence as a basis for their judgements through reference to candidate e-portfolios and through signed witness statements associated with the criteria matching marks in the on-line mark book. Before authorizing certification, the Account Manager must be satisfied that the assessors judgements are sound.

Links
[1] http://theingots.org/community/Computing_qualification_info_units
[2] https://theingots.org/community/sites/default/files/uploads/common/Handbooks/Computing/L3_OpenSystems_Computing_v2%20.pdf