Gold - Unit 27 - Design Software (4 Credits)

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Overview

Design Software at Gold Level requires the candidate to plan and review their design environment and research the most effective ways to meet user needs. They will also need to describe and understand the legal aspects of what they do as well as the importance of correct file types. This will ensure that the final products meet all local and national standards and can be used in a variety of presentations. The candidates will also need to show a good understanding of design principles and demonstrate competence in using tools and techniques to enhance their designs..

A work activity will typically be 'non-routine or unfamiliar' because the task or context is likely to require some preparation, clarification or research to separate the components and to identify what factors need to be considered. For example, time available, audience needs, accessibility of source, types of content, message and meaning, before an approach can be planned; and the techniques required will involve a number of steps and at times be non-routine or unfamiliar.

Example of context – using some software to create a 3D design for a 3D printer or designing a new kitchen for your family. Other complex designs not covered by other units such as graphics, audio, DTP or video.

Example of work at this level (coming soon)

Assessor's guide to interpreting the criteria

General Information

QCF general description for Level 2 qualifications

- Achievement at QCF level 2 (EQF Level 3) reflects the ability to select and use relevant knowledge, ideas, skills and procedures to complete well-defined tasks and address straightforward problems. It includes taking responsibility for completing tasks and procedures and exercising autonomy and judgement subject to overall direction or guidance.
- Use understanding of facts, procedures and ideas to complete well-defined tasks and address straightforward problems. Interpret relevant information and ideas. Be aware of the types of information that are relevant to the area of study or work.
- Complete well-defined, generally routine tasks and address straightforward problems. Select and use relevant skills and procedures. Identify, gather and use relevant information to inform actions. Identify how effective actions have been.
- Take responsibility for completing tasks and procedures subject to direction or guidance as

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needed.

Requirements

- Standards must be confirmed by a trained Gold 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 2 learner 40 hours of work to complete.

Assessment Method

Assessors can score each of the criteria N, L, S or H. N indicates no evidence. L indicates some capability but some help 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 a S on all the criteria to achieve the full award.

Expansion of the assessment criteria

1. Candidates will obtain, insert and combine information for designs

1.1 I can describe what designs are needed

Candidates need to demonstrate they can describe the overall needs associated with their designs.

Evidence: Written evidence and plans with detailed descriptions.

Additional information and guidance

As with anything in life, there is little use in rushing in to things and hoping they will work out. The same applies to designs. There are so many issues that need to be thought about such as time, resources, support etc. Candidates need to put together a descriptive plan about that their designs will be, who they are for and why and what all of this means for the life and development of the designs themselves. They need to describe each of the factors that will make this unit a success. How much time will then spend on each elements. Will they spend time on prototypes? If so, what

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percentage of the overall time allowance. The types of designs will need to be described in terms of why they are being made and what restrictions and limitations are placed on them, for example they may be for printing on large posters, so how will they ensure that the resolution is not affected badly. They might be designing for a production in a 3D printer, so what file types work best and why. All of these elements need to be carefully considered and described as part of the overall planning.

1.2 I can obtain, input and prepare designs to meet needs

The designs will likely be a combination of elements based on a client's needs. This needs to be demonstrated.

Evidence: Written evidence of the process and elements in digital form.

Additional information and guidance

Candidates will need to research suitable resources they need to make their final designs and some of these will need some additional preparation. For example, they might find a graphic they wish to use that has a white background, but they need the background to be transparent so they can overlay it in their own designs. Some of the elements they use may have been processed by some other peice of software and they may need to modify it for their use. What are some of the considerations of importing and manipulating existing images from other packages. If the materials they use are not high enough quality, how can they change them to suit their needs? If an image they need is not high enough resolution, what can they do to fix this. This process needs to be documented and carried out.

1.3 I can describe what copyright and other constraints apply to the use of designs

Since many of the elements used will be from 3rd parties, candidates need to show and understand the associated copyright and how this affects their process.

Evidence: Written evidence and assessor feedback.

Additional information and guidance

Candidates will need to show their understanding of copyright laws and regulations and if and when it applies to what they are doing. In many cases this copyright will act as a restriction on what they are trying to do and they need to show how they will get around these potential constraints. They can also use the law in their favour if they are creating original designs. This is a describe criteria so they will need to go into a decent amount of detail and show a clear understanding of the law in this area with examples. This will help them on the exam where there are specific questions on legal aspects.

1.4 I can use appropriate techniques to organise and combine information of different types or from different sources

A certain level of competence will be required to work around all of the different materials they will use and the tools.

Evidence: End product quality and descriptions of the process from reflective journals.

Additional information and guidance

Much of this can be evidenced by the end product itself, though it might be useful in some instances for students to show some reflection on the process, perhaps creating a mini user guide about how they achieved particular effects. This will be particularly useful if they have specific design requirements that have been given to them by their clients. They can also show a clear use of the various tools that form the design software they use. For example, the image below shows some objects that can be used to construct a networking diagram.

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1.5 I can describe the context in which the designs will be used

Candidates need some detail about all of the details under which their designs are happening.

Evidence: ePortfolios of evidence and digital artifacts.

Additional information and guidance

The context of the designs will have a large determination of the final outcomes. Candidates need to describe what the designs are for and what specifics they are required to create for their clients. The context could be a series of posters and other sized media, in which case they need to make a design which will scale effectively. The designs could be for a video platform and they need to understand if it is web based or not, which will determine the size of the file and the quality for delivery. If this is the case, do they need to use compression technology and if so, what impact might this have on the final designs. How much of an impact does the contect have on their design process and what can be done to deal with this.

1.6 I can describe what file format to use for saving designs to suit different presentation methods

Candidates need to describe in detail what file types are required and why.

Evidence: Written evidence and assessor observations.

Additional information and guidance

Some basic knowledge of different file extensions for different purposes and an understanding that some software can output different file types depending on what is required. If the design software if for DTP, they can output the file in the program's proprietary format or as a more standard format such as PDF. The output could be for further development, such as graphics or video files etc. Candidates need a detailed description of the main file types they will be dealing with as well as some detail of their purpose and perhaps a list of their strengths and weaknesses.

1.7 I can store and retrieve files effectively, in line with local guidelines and conventions where available

Basic skills in managing files and working to local standards will be required throughout.

Evidence: Submission of final products should be sufficient here.

Additional information and guidance

Students should be competent in moving and managing files and may have to meet other requirements, for example their clients may need the final products delivered via USB sticks, in which case they need to document and describe this process.

2. Use design software tools to create, manipulate and edit designs

2.1 I can identify what technical factors affecting designs need to be taken into account and how to do so

Some familiarity with restrictions on their design environment needs to be shown.

Evidence: Written evidence and reflections in their journals or other digital applications.

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Additional information and guidance

Some overview of their working environment would be useful here to show that candidates know what they are able to use and what restrictions this might have on their final work. The technical factors might be the types of peripheral devices they have access to. For example, some drawing programs might require a stylus pen to be able to do fine details. If they have no access to this, or can't use it effectively, this is a technical limitation. By identifying some of the issues that may impact on their designs, they can at least figure out how to work around them. other technical factors can be discussed and will vary depending on what software is being used. Some software may be designed for specific operating systems or have limitations in the type of file formats it outputs or inputs. These technical limitations could cause problems if left too late and could be part of the initial planning. Candidates should be aware that they will struggle to build their own car on a standard 3D printer for example, though it is feasible.

2.2 I can select and use suitable techniques to create designs

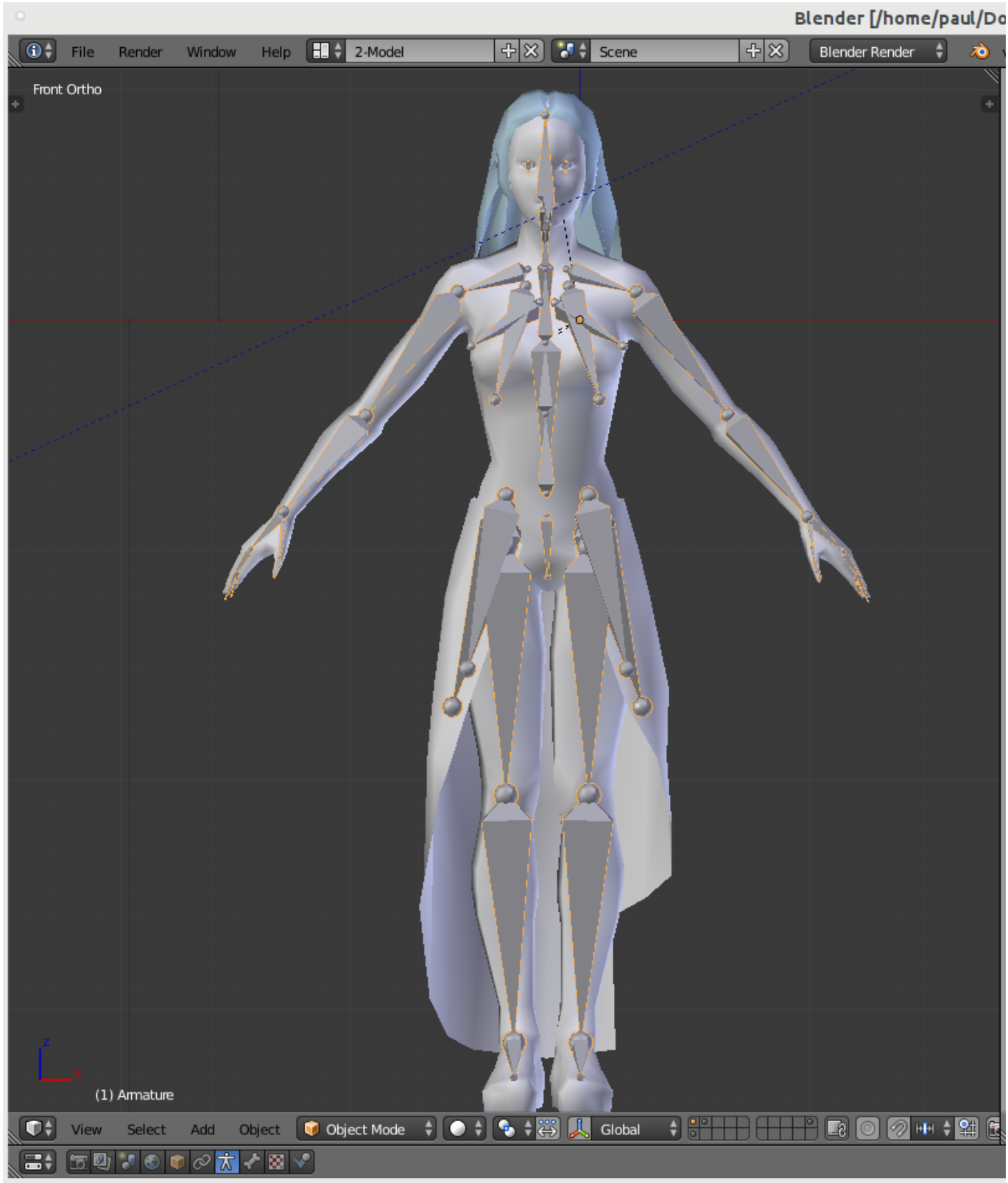
Evidence of the required skills to make designs.

Evidence: Assessor observations and feedback.

Additional information and guidance

Some evidence here will be apparent in their final designs, but it may also be useful to identify the tools and techniques they intend to use and how these fit in with their desired outcomes. They will need to make designs which show, if not explained elsewhere, a skill in using tools such as polygons and shading. They should show that they can use overlay functions to build up complex designs and not just accept pre-made designs as they are. Designs will likely consists of some manipulation of shapes, for example animation software often uses pre-set shapes and then distorts these into th required more complex shapes. The following image shows a combination of shapes to make a female warrior for a computer game in Blender [3].

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2.3 I can use guide lines and dimensioning tools appropriately to enhance precision

Demonstrating a good use of the full range of design tools available.

Evidence: Assessor observations and reflections in journals.

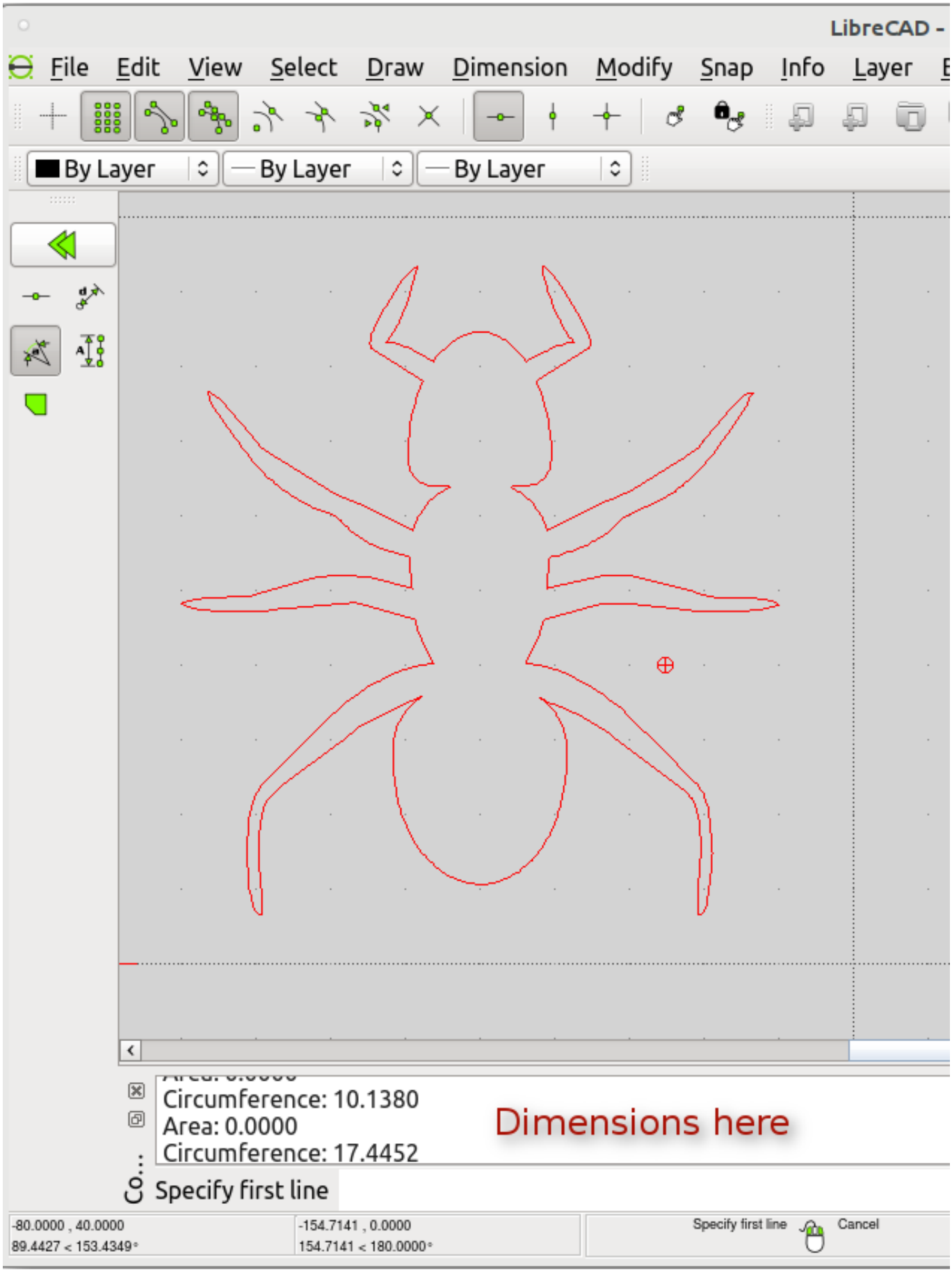
Additional information and guidance

They may not be available in all design software chosen, but most should have ways of making sure that designs are precise and meet design specifications based on specific dimensions. These can be

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met with the use of measuring tools or guides with built in dimension checking tools. If this can be related back to client needs or rough designs this would help to illustrate a clear understanding. Most blueprint designs presented for manufacturing will include the use of precise measures and these need to be replicated with the design software. In some instances, this may be down to 100ths of mm. The following CAD program has a window under the design to show some of the dimentions.

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2.4 I can select and use appropriate tools and techniques to manipulate and edit for designs

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A good understanding of the tools they are working with needs to be shown here.

Evidence: Assessor observation and reflections in journals.

Additional information and guidance

Designs will likely be composed of a multitude of interlocking elements and moving them around and positioning them correctly will require good skills in the use of editing and manipulation functions. Some of this skill will be evidenced in the final designs, but other skills would be useful to highlight in some mini user guide or set of instructions. Perhaps students can write a short summary of how they achieved the desired results to their client for example. A presentation of how they carried it out, perhaps as a video, would also be useful.

2.5 I can check designs meet needs, using IT tools and making corrections as necessary

Candidates need to show that they designed to a specific requirement and not just on a whim.

Evidence: Candidate feedback and assessor feedback.

Additional information and guidance

In the design process the candidate will need to check at certain milestones that their design is what is required, particularly if it is for a client. They should also build in the ability to get detailed feedback on the final design to make sure it met these needs and to address ways to fix problems if they are identified. Some might be simple things such as spelling corrections, while others may be more complex dimensional changes that have affected a production process.

2.6 I can identify and respond to quality problems with designs to make sure that they meet needs

Candidates will demonstrate an appreciation and application of quality assurance techniques and procedures.

Evidence: Client feedback and subsequent action or recommendations.

Additional information and guidance

Issues amy arise in the development process or at the beginning of the design and candidates need to show some process by which they fix these issues or find solutions such as the intervention or support of more skilled people. When they have completed the design to their own satisfaction, they need to be able to respond to further requirements from a client who has changed their mind. This is all important in a design process.

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.

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Source URL: https://theingots.org/community/SIL2U27x

Links
[1] http://theingots.org/community/ITQ_unit_development
[2] http://theingots.org/community/handbook2
[3] https://www.blender.org/download/

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