

# 2023 ASSESSMENT REPORT

## CGD315118 COMPUTER GRAPHICS AND DESIGN

### Folio report

Nearly all portfolios were submitted in strict adherence to the portfolio guidelines, either in the form of a single PDF document or as part of a ZIP file, which included a PDF document detailing the design process and a video file. It is imperative for both candidates and educators to thoroughly acquaint themselves with the published TASC project guidelines to ensure that the submitted projects align with the specified requirements. This year, the overall presentation, documentation and quality of design portfolios exhibited a notably more uniform standard in comparison to the preceding year.

The portfolios displayed a well-organised and coherent progression, following the established design process and guidelines, along with an interlinked industry essay. It is advisable to incorporate a cover page featuring the project title, the candidate's TASC ID number and an image representing the final design. Additionally, it was found beneficial for candidates to present a simple animation showcasing the student's final design as a separate video file, rather than embedding it within the project documentation. This approach allows examiners to swiftly grasp the student's design outcome without navigating through numerous embedded images and video files.

Highly successful projects once again illustrated a thorough fulfillment of the portfolio criteria. However, a small fraction of candidates still tend to prioritise quantity over quality. It is recommended to undertake smaller and less ambitious design projects and execute them effectively, rather than pursuing a design project that clearly exceeds the 50-hour design timeframe and the student's capabilities. In such instances, the portfolio and project often lack finesse in design development and resolution.

The composition of a coherent and accurate design brief or proposal showed improvement in comparison to previous years. The design brief serves as the cornerstone of the design project and candidates are advised to provide a concise statement outlining the defined expectations and objectives for the project, referred to as "The Brief." Supporting information should be included, such as a design scenario with an intended client, references to the context or primary design concept, the target audience, functional objectives and intended methods for presenting the project outcome. It is observed that candidates with a coherent design brief, in nearly all cases, achieve a successful design project outcome.

The research or precedents phase of the project design process plays a pivotal role in the analysis of the project brief and lays the foundation for subsequent design development. Stronger projects featured well-researched precedent content, thoroughly annotated, interconnected and analysed using design language that aligns with the design intent of the brief. However, a few candidates encountered challenges in understanding the significance of this phase in the design process. They presented inadequately articulated precedent research that lacked a clear connection to the design brief, resulting in a deficient reflection of design elements and principles. To prevent any confusion about authenticity, it is advisable to reference

research images in proximity to the respective content, and when created or captured by the candidate, proper acknowledgment should be given.

Exploration and experimentation through design sketching, whether with traditional pencil or digital tools, are pivotal aspects of the design process. These phases provide opportunities for students to gain a profound understanding of their design intent before proceeding to the production phase and for a comprehensive exploration of the appropriate application of design principles and elements. It was noted that many design projects did not strongly emphasize this phase. These sketches were often inadequately annotated and failed to meet visual communication standards. For instance, orthographic or multi-view representations should adhere to standard layout conventions. In contrast, stronger candidates unequivocally demonstrated their capacity to explore and experiment with ideas, alongside a process of reflection and refinement to attain a coherent final design solution, well-prepared for the production phase. These design sketches were appropriately annotated, effectively communicating the thought process behind the design. It is vital for candidates to furnish evidence of the evolution of their design idea, rather than focusing solely on a single concept. Furthermore, some candidates need to improve the quality of scanned design sketches to enhance their legibility within the portfolio. Proficiency in design sketching should be explicitly nurtured in candidates and imparted by educators. A viable test of whether a design has been fully and adequately resolved is whether an examiner or an external party can generate the design using the provided material and appropriate computer graphics tools.

The majority of candidates provided annotated screen captures of their production process, which added an additional layer of evidence substantiating their comprehension of production processes. Nevertheless, it is essential that these screen captures are appropriately annotated, linking them to specific techniques for generating computer graphics, along with capturing toolbars and menus for the sake of authenticity. Screen captures lacking specific commentary related to actual processes, or those with minimal commentary, fail to supply the required evidence of the authenticity of student-generated computer graphics. Candidates are encouraged to provide a comprehensive list and screen captures of imported assets created by external providers, properly referenced, to differentiate between student-generated content and imported elements.

Ensuring the correct application of computer graphic production processes is paramount. Most candidates applied suitable compression codecs and contemporary aspect ratios when creating animations. Proper selection of image resolution for the final design content is crucial, as is ensuring fully resolved design outcomes. High-level projects showcased adept application and production of digital content across various contexts. It was gratifying to witness some projects comprising a series of still images presented in a video format, offering a more coherent method of displaying the candidate's design outcomes. The incorporation of suitable music or sound effects further enhanced the animated content. Submitting a screenshot as the final product was not regarded as an appropriate method for final presentation or production.

In the case of logo-based and certain game-based projects, there is often an insufficiency of Computer Graphic content to satisfactorily fulfill criterion 8. These types of projects should be avoided unless the candidate is willing to supplement them with a substantial amount of student-generated digital content. Projects presented in a 3D format were more likely to secure higher scores than 2D logos, as they allowed candidates to demonstrate a wider range of skills. For logo projects, it is recommended to incorporate the design into a product to exhibit a broader skill set.

The industry analysis essay was effectively executed by many candidates, successfully establishing a connection between the design principles and elements of the project and the design and production methods related to computer graphics. For a smoother flow of the design process and overall presentation, it is advised to place the essay at the end of the portfolio, as several portfolios had it embedded in the middle, disrupting the sequence. Regrettably, there were instances where the essays lacked a clear connection with the Computer Graphics and Design context, predominantly focusing on the industry sector of the project. Encouragingly, there were only a few instances where the essays resembled first-person commentaries on the student's own design process. Essays should focus on how and why computer graphics is used within a specific industry, how the design process is used, along with the use of relevant elements and principals of design. The industry analysis essay should adhere to academic essay formatting standards, including proper referencing in the preferred Harvard format and meeting the stipulated word count.

A significant portion of candidates adhered to the principles of academic integrity by correctly referencing content sources in both the folio design process, and the use of imported assets, and the industry analysis essay. The overall adherence to TASC academic integrity requirements exhibited an improvement compared to the previous year.

Many candidates conducted a substantial evaluation and reflection on their design outcomes, in response to their design brief. This step plays a crucial role in the design process by facilitating reflection on learning and the overall process. Candidates who omitted this critical evaluation or reflection had an incomplete design process.

Approximately 5% of candidates presented portfolios that can be considered exemplary and attained the highest possible ratings. These portfolios effectively conveyed a robust design process, demonstrating a high-level application of design principles and elements within the chosen design context. In summary, a high-level portfolio should encompass:

- a design brief that provides a short statement outlining the set expectations and goals for the project as “The Brief” and then provide support information with a design scenario with an intended “client”, that clearly articulates the design intention, context, functional considerations and a potential target audience
- comprehensive annotations of precedents connected to the design intention of the project brief. An exploration, experimentation and evaluation through design sketching of a diversity of ideas leading to a clearly resolved final design intention
- annotated screen grabs of the production process that effectively communicates insight and understanding of the computer graphics techniques and processes used
- an industry analysis essay that makes a strong link between the design context and computer graphics processes that conforms to TASC academic integrity requirements
- an evaluation/reflection that reflects the learning and outcomes of the design intention in response to the design brief
- a complete and resolved project that applies a diversity of appropriate computer graphics process and conforms to industry standards of the design context with correct referencing of content sources not generated by the student.

# Written Exam

## Question 1

This was a popular question with 58% of candidates attempting it. A significant majority of candidates received either a “C” or “B” rating with 10 candidates gaining an “A” rating. Better answers identified each of the stages of the Design Process, showed examples of how it is not a simple linear process and justified reasons for feedback such as manufacturing and material limitations or client feedback. Higher level answers identified the importance of consultation and negotiation with all stake holders throughout the process. Better answers stated that a well-structured design process will identify and avoid manufacturing problems at a point where they can be rectified at a lower cost point in the process.

## Question 2

44% of candidates attempted this question with a fairly even spread of results with more than a quarter of those gaining an “A” assessment. Only a small number failed to achieve a satisfactory result. Quite a few identified the design elements and principles of colour, shape and line to convey a clear representation of the selected elements and principles. Many responses were substantiated with well-presented annotated drawings.

## Question 3

Approximately two thirds of candidates attempted this question with a good spread of satisfactory and above satisfactory responses. Successful candidates identified the importance of the Design Brief as a kind of “roadmap” that guides the Designer in a way that is not so prescriptive as to stifle the creative input of the Designer while ensuring that the needs and intent of the client are guaranteed to be achieved.

## Question 4

68% of candidates attempted this question. More than two thirds of those candidates failed to achieve above a satisfactory “C” rating due to providing answers that simply stated that watermarks are only used to prevent plagiarism. Better answers clarified that the emergence of Artificial Intelligence has created a world in which photographic and video “evidence” can no longer be trusted as it has become so easy to for AI technology to create imagery that heads into the territory of “fake news”. Mandatory inclusion of watermarks and meta data on AI generated imagery reduces the risk of the image being used to create a false reality.

## Question 5

64% of candidates attempted this question. One quarter of those achieved an above satisfactory result with a little over half only achieving the “C” rating. Most responses simply re-iterated the themes expressed in the question statement without mentioning broader sustainability issues.

## Question 6

This question was attempted by almost half of the candidates. Of those, more than half received highly satisfactory results or better. Satisfactory responses accurately described the differences between form and function and their importance with at least one relevant example. Above average responses included two relevant examples and demonstrated an understanding of form and function. The strongest responses used highly relevant examples and drew comparisons between the two to demonstrate a deeper understanding of form vs function. 12% of candidates that attempted this question did not receive a satisfactory result as their responses did not demonstrate an understanding of the differences between form and function.

## Question 7

This question was attempted by under a quarter of the candidates. Nearly all of the candidates received satisfactory or highly satisfactory results for this question listing five skills or strategies especially relevant to working remotely as part of a team. Weaker responses listed skills or strategies that while helpful had little or no relevance to coordinating remotely. The strongest responses gave examples of these skills and strategies being used in conjunction with the relevant tools and software.

## Question 8

This question was attempted by over a quarter of the candidates. Over half of these received a satisfactory result for their response. Satisfactory responses demonstrated an understanding of the value of collecting a range of reference material to look for inspiration through examples of good design. The strongest responses used strong examples of classic or timeless designs that had are still seen in contemporary design solutions.

## Question 9

This question was attempted by over a third of the candidates. Responses to this question varied greatly, while satisfactory responses accurately named two new interface technologies, the strongest responses used outlined their potential applications and implications. Over 20% of candidates that attempted this question did not receive a satisfactory result as they gave examples of recent technologies that were not interfaces and as such failed to demonstrate an understanding of the question.

## Question 10

This question was attempted by over 85% of the candidates. Unfortunately, almost 30% of these received unsatisfactory results as their sketches did not accurately represent what would commonly be seen in the fourth view port of a 3d Modelling Program. Satisfactory answers were commonly accurate sketches of 2-point perspectives and isometric views of the object. The strongest answers accurately named the type of drawing being created and the drawing conventions being adhered to. Almost 10% of candidates received the highest marks for their accurate drawings with correct names and conventions outlined.

## Question 11

Candidates who answered this question did so with a clear insight and understanding of how software automates the process of creation. Strong responses discussed advances in rendering and lighting, animation in tweening and motion capture, Particle generation for smoke, fire, water and explosions.

## Question 12

40% of students attempted this question. Stronger responses discussed file types and their best use along with whether they were Lossy, Lossless or animation. Typical responses included JPG for printing, Tiff for photographs, Png for websites and Gif file types for animations.

## Question 13

This question was answered by approximately a third of candidates. They described how native file types are in a default format in which the software program creates the file and retains all the functionality of that software. Stronger responses discussed a range of Open file types and discussed whether they were raster, vector or MP4.

## Question 14

50% of respondents answered this question with strong responses having a good understanding of the issues that can occur when creating a character mesh. Common response included mesh that was too complex which made the file too large resulting in slow regeneration times. Simple mesh with larger polygons resulted in faceted models. Open elements in the mesh resulting in holes in the mesh and creating complications with rendering and animation.

## Question 15

This question was well answered by the small number of candidates who answered it. Strong responses discussed 3D printing and how it adds successive layers to create an object (additive). While CAM uses software to machine away stock from and existing materials (subtractive).

## Question 16

50% of candidates attempted this question. Strong responses discussed in detail how Tweening allows the creator to create key frames in the animation and the software filling in key frames which are in between. Common responses provided an example on how this technique would be used. Motion capture was discussed with good responses outlining how cameras track markers on a subject and then that motion is digitised.

## Question 17

This was a popular question which was answered well by those who attempted it. Social issues discussed were the need for the business to provide a safe environment, and the need to cater for patrons with a

disability. Strong responses discussed the need to activate the hand sanitised by motion sensor or foot activation. Equipping the station with facial recognition to track and trace people was also amongst the well answered responses. Environment considerations included dealing with recycling the station waste and the unit itself, production methods, cost associated with running, the production and recycling of the station were also discussed.

## Question 18

This question was attempted by 14% of the candidates. Of these, most responses were of a satisfactory level, with a functional layout of a playground. Stronger responses showed evidence of understanding the design process and demonstrated an awareness of the social and ethical issues associated with a project of this nature ranging from safety to environmental impact. The strongest responses incorporated this understanding into innovative design solutions within their sketches.

## Question 19

Just over a quarter of candidates attempted this question. Only 2 candidates gained an “A” rating, with a further 9 receiving a “B” assessment. Higher standard responses typically contained an annotated pictorial drawing (perspective or Isometric) as well as a site plan communicating the arrangement of the temporary structures and associated facilities. Shipping container conversions were a popular theme for this question.

## Question 20

This question was attempted by 20% of the candidates. Quality of responses were mostly of a satisfactory standard or above but varied greatly in quality. Satisfactory responses included a relevant sketch of a character to be animated and at least a basic annotated story board. Stronger responses discussed social and ethical considerations such as broad appeal and non-denominational character designs for greater inclusion and to avoid discrimination. The strongest submissions included clearly well thought out and annotated story boards and strong evidence of design considerations when creating a 2D sketch of a character ready for 3D modelling and animation.

## Question 21

10 candidates attempted this question. Nearly all achieved good and very good results conveying detailed knowledge and application of a range of 3D computer modelling techniques.

## Question 22

This question only attracted 2 responses, both of which achieved high standard results. These answers contained detailed definitions and relevant examples of video and motion graphics.

## Question 23

This question was answered by 17% of the candidates. Responses to this question were generally all of at least a satisfactory standard, with over half of the candidates’ responses being to a high or exceptional

standard. Successful responses demonstrated an understanding of the difference between 3D printing (Additive) and CNC Machining (Subtractive) technologies. Highly successful responses demonstrated a deeper understanding of the advantages and disadvantages of the two and where each technology was more commonly appropriate.

## Question 24

This question was attempted by 23% of the candidates. Most candidates demonstrated an understanding of the advances in technology and the implications this has on developing in game assets. Stronger answers gave clear examples of a variety of both advances in technology and optimisation techniques that designers could undertake. Only the strongest examples gave detailed descriptions of how a game asset is best developed to meet functional specifications while maintaining high visual quality.

## Question 25

Candidates who answered this question did so with a clear understanding of where interactive design could be used and how they are applied. Strong responses discussed:

- walk throughs-rendered animations used for architecture
- interactive Graphics-camera and point of view controlled by operator used in individualized view of a project
- virtual Reality- rendered graphics used in virtual and immersive environments such as games and high-end simulations
- augmented Reality-rendered graphics overlaid on the real world.

## Question 26

This question was answered by approximately a third of candidates. Strong responses clearly outlined the workflow that is required to produce an animated story. Included in the typical “A” type responses were the need for concept development, 3D modelling, refinement, rigging, script, special effects, texturing lighting, video editing, marketing and distribution.