

2024 ASSESSMENT REPORT

CGD315118 COMPUTER GRAPHICS AND DESIGN

Folio Component

The majority of portfolios adhered closely to the submission guidelines, presented either as a single PDF document or within a ZIP file containing a PDF outlining the design process and a video file. Candidates and educators must thoroughly review the published TASC project guidelines to ensure projects meet all specified requirements. This year, the presentation, documentation, and overall quality of design portfolios were noticeably more consistent compared to the previous year.

Portfolios demonstrated a clear and logical progression, aligned with the design process and guidelines, and included an integrated industry essay. It is recommended that portfolios begin with a cover page displaying the project title, the candidate's TASC ID, and an image of the final design. Additionally, presenting a standalone video showcasing the final design, rather than embedding it in the documentation, allows examiners to quickly grasp the design outcome without navigating multiple embedded images and videos.

Highly successful projects consistently met the portfolio criteria. However, a few candidates prioritised quantity over quality. Candidates are advised to focus on smaller, manageable projects executed effectively, rather than overly ambitious projects that exceed the 50-hour design timeframe or their capabilities, as these often result in incomplete or underdeveloped portfolios.

The creation of coherent and concise design briefs improved this year. A well-structured brief is foundational, providing clear expectations and objectives for the project. It should include supporting details such as the design scenario, intended client, context, target audience, functional objectives, and presentation methods. Candidates with strong briefs were more likely to achieve successful outcomes.

The research and precedents phase remains vital for analysing the design brief and establishing a solid foundation for development. Successful projects included well-researched, annotated, and interlinked precedent studies that aligned with the brief's intent. Conversely, some candidates struggled with this phase, presenting unclear or irrelevant research disconnected from the design brief. To avoid issues with authenticity, research images should be properly referenced and acknowledged if created by the candidate.

Design sketching—whether traditional or digital—is crucial for exploring and refining ideas before production. However, many portfolios lacked adequate emphasis on this phase, with poorly analysed sketches and insufficient exploration of design principles. Stronger candidates showcased diverse ideas, iterative refinement, and appropriately annotated sketches that effectively communicated their thought processes. Clear evidence of the design's evolution is essential, and scanned sketches should be legible. Educators should emphasise sketching proficiency and its importance in the design process.

Most candidates included annotated screen captures of their production process, providing evidence of their understanding of computer graphics techniques. However, some lacked sufficient commentary, reducing their authenticity. Candidates should clearly annotate screen captures, detailing specific production techniques and referencing imported assets to distinguish them from student-generated content.

The proper application of computer graphic production techniques is critical. Most candidates effectively used appropriate compression codecs and aspect ratios in animations, ensuring high-quality outputs. High-level projects often integrated still images into coherent video formats, sometimes enhanced with sound effects or music. Simple screenshots of the final design were deemed unsuitable for final presentations.

Logo-based and game-based projects frequently lacked sufficient computer graphics content to meet criterion 8 requirements. Such projects should be supplemented with additional digital content or presented in a 3D format to demonstrate a broader range of skills. For logos, incorporating the design into a 3D product can enhance the portfolio.

The industry analysis essay was well-executed by many candidates, linking design principles with computer graphics methods. For better flow, the essay should be positioned at the end of the portfolio. Essays should focus on how computer graphics are utilised in the relevant industry and adhere to academic standards, including proper Harvard referencing and the required word count.

Adherence to academic integrity improved, with most candidates correctly referencing sources for both the design process and imported assets. Reflecting on and evaluating design outcomes in response to the brief is a critical step that some candidates omitted, resulting in incomplete portfolios.

Approximately 4% of candidates submitted exemplary portfolios, earning top ratings. These portfolios demonstrated a robust design process, high-level application of design principles, and alignment with the chosen design context.

Key Components of a High-Level Portfolio:

1. Design Brief: A concise statement of project goals and expectations, supported by a design scenario, client, context, functional objectives, and target audience.
2. Research of Precedents: Well-analysed including relevant research aligned with the design brief's intent.
3. Exploration and Experimentation: Comprehensive sketching and idea development, including analysis against the brief and elements and principles.
4. Production Process Documentation: Annotated screen captures demonstrating computer graphics techniques used.
5. Industry Analysis Essay: An analysis of a design industry with a strong connection to the design context and computer graphics processes, adhering to academic integrity requirements.
6. Evaluation and Reflection: Insightful analysis of learning and design outcomes in response to the brief.
7. Final Project: A complete industry-standard design with appropriate references for all non-student-generated content.

By adhering to these guidelines, candidates can produce portfolios that not only meet TASC standards but also showcase advanced design and technical skills.

Written Component

Question 1

88% of candidates attempted this question. Almost half achieved higher than satisfactory results for their responses. The most successful responses referred to society's familiarity with certain colours, shapes, fonts, and line types to represent warnings and dangers.

Question 2

45% of candidates attempted this question. Over a third achieved higher than satisfactory results for their responses. The most successful responses emphasised the importance of the design brief in providing direction, clarity, understanding of restrictions and requirements, context, and societal and environmental awareness.

Question 3

Only 9% of candidates attempted this question, and of those, only a few received above satisfactory results. The most successful responses provided strong examples of designs or inventions that have significantly influenced society in unexpected ways, outlining examples of how they dramatically altered the way we live.

Question 4

51% of candidates attempted this question. Half achieved higher than satisfactory results for their responses. The most successful responses discussed speed, brainstorming, idea creation, and background and texture work. The highest-scoring responses explored how tools like the Spot Healing Brush in Photoshop, which previously focused on "touching up," now create centrepieces thanks to advancements in AI algorithms.

Question 5

Approximately a third of candidates attempted this question, with a good spread of satisfactory and above-satisfactory responses. Successful candidates identified the importance of creating products from quality materials and construction while sourcing materials from sustainable resources. Strong responses discussed the need for products to be repairable by using screws, clips, and snaps instead of permanent adhesives, enabling easier disassembly for repairs.

Question 6

This question was attempted by most of the candidates. Of these, more than half received highly satisfactory results or better. Strong responses analysed how players' emotions and immersion are enhanced by colour to convey desolation and emptiness in the game. Areas discussed included desaturated colours such as greys, faded blues, and sepia tones. The use of negative space to emphasise desolation and contrast with darkness was also highlighted.

Question 7

This question was attempted by a quarter of the candidates. Nearly all received satisfactory or highly satisfactory results by outlining the crucial right to protect intellectual property. In doing so, they demonstrated an understanding of how this respect for designers' rights fosters a creative and supportive digital environment. Most candidates recognised that digital works are protected by copyright and that any content on the internet is copyrighted unless explicitly stated otherwise.

Question 9

Fifty percent of respondents answered this question. Strong responses demonstrated a good understanding of the differences in capabilities between entry-level and high-end professional monitors. These responses discussed resolution, refresh rates, and the ability to calibrate colour accurately.

Question 10

This was a popular question and was answered well by those who attempted it. Strong responses discussed how multi-viewports enhance productivity, accuracy, and creativity, while adjustable display modes cater to specific design tasks and user preferences.

Question 11

This was a popular question, with 58% of candidates attempting it. A significant majority received either a "C" or "B" rating, with 19 candidates achieving an "A" rating. Better answers identified that the JPEG file format provides smaller file sizes with acceptable quality, while PNG files offer higher-quality images with transparency. Responses highlighted that JPEG uses lossy compression, whereas PNG uses lossless compression.

Question 12

This question was answered by a third of the candidates. Most respondents outlined the difference between the two animation techniques. However, several candidates did not elaborate further, failing to outline how the sheep animation should use pose-to-pose techniques to establish action, followed by straight-ahead techniques for fluid transitions, spontaneity, and realism.

Question 13

33% of candidates attempted this question, with a third achieving higher than satisfactory results. The most successful responses demonstrated a strong understanding of the differences between solid modelling for precise engineering purposes and surface modelling for creating visually appealing, complex shapes.

Question 14

52% of candidates attempted this question. A third achieved higher than satisfactory results. The most successful responses explained the differences between layering (emphasising visual stacking and separating elements) and grouping (manipulating multiple objects simultaneously), including the advantages and disadvantages of each.

Question 15

70% of candidates attempted this question. A quarter achieved higher than satisfactory results, while 13% received unsatisfactory results. The most successful responses demonstrated a strong understanding of good mesh topology, particularly the importance of four-sided polygons when modifying 3D models with tools such as subdivision and edge loops. Some candidates showed a lack of understanding by discussing cubes rather than topology.

Question 16

Only 15% of candidates attempted this question. Half achieved higher than satisfactory results. The most successful responses demonstrated a clear understanding of the pros and cons of using HDRI files for image-based lighting (IBL) compared to traditional scene lighting. Realism and efficiency were common factors considered. While few candidates knew what HDRI stood for, most provided satisfactory or better explanations of how HDRI files work with IBL.

Question 17

35% of candidates attempted this question. Half achieved higher than satisfactory results. The most successful responses demonstrated the importance of consulting with clients and target audiences, analysing locations, and selecting environmentally friendly materials. Strong sketches focused on the design brief's requirements for a "conversation-friendly" environment, showcasing multiple variants of circular, U-shaped, and inward-facing seating arrangements. Cost, durability, ergonomics, and visual appeal were key factors in the best responses.

Question 18

Only 5% of candidates attempted this question. Stronger responses focused on designing an advertising campaign that highlighted the client's requirement for environmentally friendly and sustainable tourism. The best responses outlined steps such as consulting with clients, environmental experts, and locals; conducting focus groups; and undertaking environmental impact assessments. Storyboards effectively linked sustainable tourism with creative use of CGD to draw attention to these themes.

Question 19

This question was attempted by 38% of candidates. Most responses were of a satisfactory level, with limited design evolution of the logo. Strong submissions included nutritional information and demonstrated an understanding of the design process. They also considered social and ethical issues, such as locally sourced ingredients and eco-friendly packaging that is biodegradable, recyclable, or reusable.

Question 20

This question was attempted by a third of the candidates. The quality of responses was mostly satisfactory or above but varied significantly. Satisfactory responses included a relevant sketch of a character using orthographic techniques. Stronger responses addressed social and ethical considerations, such as broad appeal and non-denominational character designs to promote inclusivity and avoid discrimination. The strongest submissions discussed a range of considerations, including consultation and decision-making before production commenced.

Question 21

19% of candidates attempted this question. Two-thirds achieved higher than satisfactory results. Strong responses demonstrated a clear understanding of the differences between polygon-based modelling, digital sculpting, and 3D scanning, including their advantages, disadvantages, and appropriate use cases. The strongest examples provided real-world scenarios demonstrating the when, how, and why of each method. Unsatisfactory responses often failed to differentiate between these asset creation types.

Question 22

Only 2% of candidates attempted this question. Strong responses clearly distinguished between motion capture (capturing whole-body movements with specialised suits, cameras, or software) and performance capture (capturing finer details such as facial expressions and subtle pose shifts). The best responses discussed how these techniques bring non-human computer-generated characters to life, referencing examples like Smaug in *The Hobbit* and Caesar in *Planet of the Apes*.

Question 23

Only 2% of candidates attempted this question. Strong responses demonstrated a clear understanding of finite element analysis (FEA), including its applications, such as structural and thermal analysis, aerodynamics, and crash simulations. The strongest examples provided accurate and relevant industry applications.

Question 24

Six candidates attempted this question, and nearly all achieved good or very good results. Their responses conveyed detailed knowledge and application of various 2D and 3D computer animation techniques. Stronger responses clearly demonstrated how digital tools streamline the animation process, while traditional techniques offer a unique artistic touch.

Question 25

This was another popular question, answered well by those who attempted it. Stronger responses discussed how game development trends will shape game design, emphasising accessibility, personalisation, and seamless experiences. As technology evolves, game designers must adapt to these transformative shifts, ensuring engaging and innovative gameplay for players.

Question 26

Candidates who answered this question demonstrated a clear understanding of how interactive design can be used and applied. Strong responses discussed how AR and VR provide clients with immersive, interactive experiences. Many students explored how these technologies enable architectural design visualisation, virtual walkthroughs, and realistic concept presentations. Technical challenges, such as hardware compatibility, integration design, and content creation, were also discussed in depth.