Assessment Tools (Student)

ICTGAM533 — Create complex 3-D interactive games

RTO	[RTO name]
Training package	Information and Communications Technology
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Student cover sheet

Student name	
Student ID	
Unit	ICTGAM533 — Create complex 3-D interactive games
RTO	[RTO name]
Date submitted	

Assessment authenticity declaration

I declare that the work submitted for this assessment is my own, that I have not plagiarised the work of others, and that I have not received or given unauthorised assistance. I understand that my assessor may ask questions to confirm the authenticity of my evidence, and that submitting work that is not my own may result in a Not Yet Satisfactory outcome and further action under the RTO's academic-integrity policy.

Student signature:

Signature · Date

Assessment tasks

E1 Knowledge Questions — Prepare to create game (knowledge questions)

Answer each question in your own words, applying concepts to a 3-D interactive game project. Where asked, use worked examples. Your responses must demonstrate para-professional (Diploma) depth: explain, justify and analyse rather than list.

1. Explain the games-development process from brief to publication, using correct industry terminology (e.g. pre-production, prototype/beta, alpha, gold master, milestone). Describe what happens in each phase.

2. For a specified 3-D game concept, explain how you would identify the game production assets required to meet creative, production and technical requirements. Give examples of asset categories and how a technical specification drives asset requirements.

3. Explain common asset formats used in 3-D game production and the integration issues that arise when importing assets into a game engine. Why must formats be discussed with relevant personnel before production begins?

4. Describe production and testing scheduling techniques suitable for a 16-week game project, and explain how you would determine the sequence for developing a beta-version prototype and monitor progress against the schedule.

5. Explain risk and critical-path management techniques and how they apply to keeping a game production on schedule. Give an example of identifying a critical path and a risk mitigation for a game project.

6. Explain / describe: technical constraints that hardware imposes on:

E1 Project — Plan the game production (project (submitted evidence))

Using your own game engine and an industry-standard 3-D game design brief (institution-supplied or self-sourced and approved by your assessor), produce the planning deliverables listed. You must obtain and reference a project brief and organisational procedures, identify required assets, document format/integration decisions after consulting relevant personnel (peers/assessor acting as team), sequence the beta prototype development, and create a production and testing schedule with a monitoring strategy. Submit all artefacts to the LMS.

Portfolio evidence you must submit:

- Project brief acknowledgement referencing organisational procedures
- Asset requirements register (assets mapped to creative/production/technical specs)
- Asset format and integration decisions record (with personnel consultation notes)
- Beta prototype development sequence plan
- Production and testing schedule (Gantt/milestone chart)
- Progress-monitoring strategy statement

Address each of the following in your submission:

1. Obtain the project brief and required documents/organisational procedures and submit an acknowledgement showing you have reviewed them.
2. Produce an asset requirements register identifying all game production assets needed to meet the creative, production and technical specifications.
3. Document decisions on asset formats and integration issues, including notes of discussion with required personnel.
4. Submit a beta-prototype development sequence plan showing the order of build toward a testable prototype.
5. Create a production and testing schedule and a strategy for monitoring progress against it.

E2 Knowledge Questions — Evaluate game-engine software and tools (knowledge questions)

Answer applying concepts to selecting a game engine for a specified 3-D game concept. Justify your reasoning at Diploma depth.

1. Compare at least two industry-standard game engines, explaining their capabilities and constraints for creating complex 3-D interactive games.
2. Explain the key features of game-play hardware and software products that must be assessed when matching an engine to a specified game concept and play requirements.
3. Explain the technical constraints hardware imposes on (a) graphics requirements, (b) code development, and (c) creative visual design, and how these constraints inform engine and tool selection.

E2 Project — Select the game engine and tools (project (submitted evidence))

For your approved game concept, review a range of industry-standard game engines and development tools, assess them against your play requirements and technical specifications, discuss selection considerations with required personnel (assessor/peer team), confirm the selection meets specified outcomes, and record your final selection. Submit the evaluation and selection artefacts to the LMS.

Portfolio evidence you must submit:

- Game-engine and tools evaluation report (options reviewed and assessed against the concept)
- Selection recommendation with personnel consultation record
- Confirmed engine and development tools selection statement

Address each of the following in your submission:

1. Produce an evaluation report identifying and reviewing a range of industry-standard game engines and development tools available.
2. Assess the reviewed software and tools against your specified game concept and play requirements and record considerations discussed with required personnel.
3. Submit a statement confirming the selected game-engine software and development tools.

E3 Knowledge Questions — Prepare required assets (knowledge questions)

Answer applying concepts to preparing assets for a 3-D game within your chosen engine. Diploma depth expected.

1. Explain how a shared project environment supports team collaboration on game assets, and describe methods (e.g. version control, asset servers) for sharing project assets among team members.
2. Explain the attributes of visual assets that matter for a game project relative to the chosen game engine (e.g. poly count, texture resolution, UV mapping, LODs, formats), and how these attributes must be customised for the engine.
3. Explain the creative, production and technical requirements involved in creating or acquiring visual assets for a 3-D game, including hardware constraints on graphics and creative visual design.

E3 Project — Prepare and customise game assets (project (submitted evidence))

Establish a project environment that supports sharing assets among team members, review the attributes required for your game engine, create or acquire the visual assets for your 3-D game, and customise their attributes to suit your game design and engine. Submit all evidence and asset files to the LMS. Sufficiency requirement: the Performance Evidence requires this on at least one occasion — you must provide evidence for each occasion/subject separately, and your assessor will record each occasion on its own dated checklist row.

Portfolio evidence you must submit:

- Configured shared project environment evidence (repository/asset-sharing setup with screenshots)
- Asset attribute review document (assets checked against game-engine requirements)
- Created or acquired visual asset set for the game
- Customised asset files/settings aligned to game design and chosen engine

Address each of the following in your submission:

1. Establish and evidence a project environment supporting sharing of project assets produced by team members.
2. Review and document the attributes of assets required in the project relative to the game engine.
3. Create or acquire the visual assets required for the game project.
4. Customise asset attributes according to the game design and chosen game engine and submit the customised assets.

E4 Knowledge Questions — Use game-engine software and development tools

(knowledge questions)

Answer applying scripting and game-play build concepts within your chosen engine. Diploma depth expected.

1. Explain basic programming techniques and language used in game development, including how scripts/code are created, modified or accessed to combine assets and drive game-play elements.

2. Explain how you create and check game-play elements against creative and technical requirements, including technical constraints hardware imposes on code development.

3. Explain how you test and run a game prototype as a presentation and confirm that sequences meet creative, production and technical requirements.

E4 Project — Build and run the game prototype (project (submitted evidence))

Using your chosen game engine, create/modify/access scripts or code to combine your assets, build and check game-play elements against the creative and technical requirements, then test and run the prototype as a presentation confirming its sequences meet creative, production and technical requirements. Submit code, the build, the checklist and a recorded presentation run. Sufficiency requirement: the Performance Evidence requires this on at least one occasion — you must provide evidence for each occasion/subject separately, and your assessor will record each occasion on its own dated checklist row.

Portfolio evidence you must submit:

- Scripts/code files that combine assets and drive game-play
- Working beta prototype build (engine project files or exported build)
- Game-play elements checklist against creative and technical requirements
- Prototype presentation run recording/screencast confirming sequences

Address each of the following in your submission:

1. Create, modify or access scripts or code and combine assets to produce functioning game-play.
2. Create and check game-play elements according to creative and technical requirements.
3. Test and run the game prototype as a presentation and confirm sequences meet creative, production and technical requirements.

E5 Knowledge Questions — Evaluate game prototype (knowledge questions)

Answer applying evaluation and testing concepts to your prototype. Diploma depth expected.

1. Explain a variety of strategies for game trialling and testing (e.g. functional testing, usability/ user trials, playtesting, cross-device testing) and when each is appropriate.
2. Explain how you evaluate a prototype against criteria for a creative and user-friendly product, and how feedback from required personnel and user trials is gathered and analysed.
3. Explain how required changes are discussed and agreed, and how endorsement is confirmed before developing the prototype into a complete product.

E5 Project — Evaluate and endorse the prototype (project (submitted evidence))

Demonstrate your initial prototype to required personnel (assessor/peer testers) and seek feedback, evaluate the prototype against creative and user-friendly criteria, discuss and agree required changes, assist with tests and user trials, evaluate the trial feedback, and confirm endorsement to develop it into a complete product. Submit all evaluation and endorsement artefacts.

Portfolio evidence you must submit:

- Prototype demonstration record with feedback captured from required personnel
- Prototype evaluation report against creative and user-friendly criteria
- Agreed changes register (discussed and endorsed)
- User trial plan and results with feedback analysis
- Endorsement/sign-off record to proceed to complete product

Address each of the following in your submission:

1. Demonstrate the initial prototype to required personnel and capture their feedback.
2. Evaluate the prototype against criteria including achievement of a creative and user-friendly product.
3. Discuss and agree required changes with required personnel and record them.
4. Assist in tests and user trials as required, and evaluate the feedback from those user trials.
5. Confirm endorsement from required personnel to develop the prototype into a complete product.

E6 Knowledge Questions — Transform prototype into final publication (knowledge questions)

Answer applying finalisation, integration and cross-device concepts to your project. Diploma depth expected.

1. Explain how you integrate all game elements per specifications and make final checks confirming sequences conform to the navigation design.

2. Compare different controller designs required for different devices, and explain how you confirm functionality across at least two browsers and at least two digital devices.

3. Explain the process for obtaining final sign-off and assembling the final publication for distribution according to organisational procedures.

E6 Project — Deliver the final publication (project (submitted evidence))

Make the changes indicated by user trials, integrate all game elements per specifications, make final checks confirming sequences conform to the navigation design, compare controller designs for your target devices, confirm functionality on at least two browsers and at least two digital devices, obtain final sign-off from required personnel, and assemble the final publication for distribution according to organisational procedures. Submit the complete build and all supporting artefacts. Sufficiency requirement: the Performance Evidence requires this on at least one

occasion; two different browsers; two different digital — you must provide evidence for each occasion/subject separately, and your assessor will record each occasion on its own dated checklist row.

Portfolio evidence you must submit:

- Change implementation record (changes from user trials applied)
- Fully integrated complete 3-D interactive game build
- Final checks and navigation conformance report
- Controller design comparison for the target devices
- Cross-browser/cross-device functionality test results (2+ browsers, 2+ devices)
- Final sign-off record from required personnel
- Assembled final publication package for distribution

Address each of the following in your submission:

1. Make the required changes indicated by user trials.
2. Integrate all game elements as required by specifications and make final checks confirming sequences conform to the navigation design.
3. Compare the controller designs required for your target devices and confirm functionality on at least two browsers and at least two digital devices.
4. Obtain final sign-off from required personnel and assemble the final publication for distribution according to organisational procedures.

Assessment conditions

This assessment must be completed under the following conditions, as specified by the unit of competency:

- hardware and software applicable to creating 3-D interactive games
- project brief
- games engine
- browsers and digital devices
- file storage
- the internet