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| **Qualification details** | | | |
| **Training Package Code and Title:** | **ICT - Information and Communications Technology (Release 7.0)** | | |
| **Qualification National Code and Title:** | ICT40120 Certificate IV in Information Technology (Gaming Development) | **State code:** | BFF9 |
| **Training Package Code and Title:** | **CUA - Creative Arts and Culture Training Package (Release 5.1)** | | |
| **Qualification National Code and Title:** | CUA41220 Certificate IV in Screen and Media (Animation, Gaming, and Visual Effects) | **State code:** | BGS2 |

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| **Assessment Title** | **AT05 Knowledge Theory Questions** | | |
| **Unit National Code & Title** | ICTGAM420 Produce interactive games (Release 1) | | |
| ICTGAM421 Identify and apply games design and game play principles (Release 1) | | |
| **Date Due** | **Session 18** | **Date Received** |  |

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| **Student Name** | Richard Pountney | **Student ID** |  |
| **Student Declaration** | I declare that the evidence submitted is my own work:  RBP  ………………………………………….. | | |

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| **Assessor Name** | **Joshua Ferguson** | | | |
| **Assessment Decision** | Satisfactory | | Not Yet Satisfactory | |
| **Assessor Signature** |  | | **Date** |  |
| **Is student eligible for reassessment (Re-sit)?** | No | Yes | **Reassessment Date:** |  |

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| **Feedback to student** | | | |
| *Via Blackboard (LMS) – Please check [Grade] section.* | | | |
| **Feedback from student** | | | |
| *Via Blackboard (LMS) – Please use [Comment] section during submission.* | | | |
| **Student signature** |  | **Date** |  |

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| **Assessment Instructions** |

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| **TO THE ASSESSOR** | |
| Type of Assessment | *Written Knowledge Questions* |
| Duration of Assessment | *8 sessions (session 11 – session 18)* |
| Location of Assessment | *Classroom, at home* |
| Conditions | *Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.*  *This includes access to:*   * *project briefs* * *applicable organisational documentation* * *game-production assets* * *technical specifications* * *game production testing and trialling tools* * *industry standard game-engine software and development tools* * *required industry-standard hardware, software and peripheral devices* * *the internet* * *required hardware and software required in researching games and the games industry*   *Learners are required to complete the required tasks and submit the required evidence electronically via Blackboard.* |
| Elements and Criteria | As detailed in the assessment plan.  You are required to make sure that all students meet the elements, performance criteria and foundation skill items as outlined in the provided checklist. |

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| **TO THE STUDENT** | |
| Purpose of Assessment | You are required to show you have knowledge of:   * basic programming techniques that may be used for interactive game development * game engine capabilities and constraints * industry standard game-play hardware and software products * technical constraints hardware and software impose on design and development * risk and critical path management, applicable to interactive game development * game production testing and trialling process * the process of evaluating game prototypes from technical, design and game play perspectives * industry standards and organisational guidelines applicable to game production * game-production assets and issues with asset integration * 3-D digital model design techniques * procedures and processes in game development * industry standard game-play hardware and software products * technical constraints hardware and software impose on design and development * industry and organisational requirements   You are required to meet the elements, performance criteria and foundation skill items as outlined. |
| Allowable Materials | Blackboard (Topic by topic) will include the following: Weekly Readings, Class notes, and Weekly Activities.  Internet resources must be recorded as references for the assessment. |
| Required Resources | *Computer with:*   * *Internet Access* * *Word processing software* * *Access to Learning Management System (LMS)* |
| Reasonable Adjustment | In some circumstances, adjustments to assessments may be made for you. If you require support for literacy and numeracy issues; support for hearing, sight or mobility issues; change to assessment times/venues; use of special or adaptive technology; considerations relating to age, gender and cultural beliefs; format of assessment materials; or presence of a scribe you need to inform your lecturer. |
| Assessment Submission | *All activities must be attempted.*  *Use of research tools and peers in formulating answers are acceptable – but work submitted must be your own work and must not be plagiarised.*  *Final files and documentation are to be uploaded to the appropriate area in the Blackboard course created for this unit.*  *If you are marked as NYS (Not Yet Satisfactory) on your first attempt, you will be provided with another opportunity to re-attempt the assessment.* |
| Project contents | This project consists of the following tasks:   * Answer all provided questions |

**Instructions**

Answer the following series of questions to the best of your ability. Ensure to provide answers for all questions before submitting the assessment.

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| **Questions** | | | | | | | |
| **Question 1 –** Describe the following techniques as they apply to the design of digital 3-D models. | | | | | | | |
| ***Sculpting*** | | | | |  | | |
| ***Sub-division*** | | | | |  | | |
| ***Boolean*** | | | | |  | | |
| ***Procedural*** | | | | |  | | |
| ***Photogrammetry*** | | | | |  | | |
| **Question 2 –** Identify 3 different industry-standard game engines. | | | | | | | |
| ***1.*** | Unity | | | | | | |
| ***2.*** | Unreal Engine | | | | | | |
| ***3.*** | Godo | | | | | | |
| **Question 3 –** Identify and briefly describe at least 3 different types of industry-standard devices that may be used as platforms for gaming. | | | | | | | |
| ***1.*** | PC | | | | | | |
| ***2.*** | Console (e.g., PlayStation, Xbox, Switch) | | | | | | |
| ***3.*** | Mobile | | | | | | |
| **Question 4 –** Describe the capabilities of the following components of game engine software in developing video games. | | | | | | | |
| ***Rendering engine*** | | | | | | This is the engine that handles the visuals in a game engine. | |
| ***Physics engine*** | | | | | | This is the engine that handles the actions & the physics behind those actions. | |
| ***Audio engine*** | | | | | | This is the engine that handles all the sounds in the game engine. | |
| **Question 5 –** Consider anddescribe 2 technical constraints of game engine software on the design and development of video games. *You may use the game engine you have been learning in this course to provide context for your answer.* | | | | | | | |
| ***1.*** |  | | | | | | |
| ***2.*** |  | | | | | | |
| **Question 6 –** Consider and describe 2 technical constraints of relevant hardware on the design and development of video games. | | | | | | | |
| ***1.*** |  | | | | | | |
| ***2.*** |  | | | | | | |
| **Question 7 –** Describe industry requirements as well as the procedures and processes that take place during each of the following phases of the production cycle for a video game. | | | | | | | |
| ***Pre-production*** | | | | This is the planning stage of production. This is when the GDD & Narrative is meant to be worked on to set a baseline. | | | |
| ***Alpha*** | | | |  | | | |
| ***Beta*** | | | |  | | | |
| ***Gold-master*** | | | |  | | | |
| **Question 8 –** Describe the standards for each of the following industry roles as they apply to video game production. | | | | | | | |
| ***Designer*** | | | |  | | | |
| ***Programmer*** | | | |  | | | |
| ***Artist*** | | | |  | | | |
| ***Sound designer*** | | | |  | | | |
| ***Producer*** | | | |  | | | |
| **Question 9 –** Describe how to manage each of the following risks as an independent interactive game developer. | | | | | | | |
| ***Unclear vision*** | | | |  | | | |
| ***Lack of budget*** | | | |  | | | |
| ***Data loss*** | | | |  | | | |
| **Question 10 –** Describe the characteristics of each listed file format. Explain the type of game assets they are associated with, and identify potential asset integration issues. | | | | | | | |
| ***.JPG*** | |  | | | | | |
| ***.PNG*** | |  | | | | | |
| ***.FBX*** | |  | | | | | |
| ***.BLEND*** | |  | | | | | |
| ***.WAV*** | |  | | | | | |
| ***.MP3*** | |  | | | | | |
| **Question 11 –** Describe how the following basic programming techniques can be used for developing interactive video games. | | | | | | | |
| ***Variables*** | | | | | |  | |
| ***Methods*** | | | | | |  | |
| ***Classes*** | | | | | |  | |
| ***Collections*** | | | | | |  | |
| ***Selection patterns*** | | | | | |  | |
| ***Iteration patterns*** | | | | | |  | |
| ***Arithmetic*** | | | | | |  | |
| **Question 12 –** Describe the following testing processes as they apply to video game production. | | | | | | | |
| ***Functionality Testing*** | | | | | | |  |
| ***Compatibility Testing*** | | | | | | |  |
| ***Play Testing*** | | | | | | |  |
| **Question 13 –** Describe how to evaluate a video game prototype from the following perspectives. | | | | | | | |
| ***Technical*** | | |  | | | | |
| ***Design*** | | |  | | | | |
| ***Game play*** | | |  | | | | |