aie
SPECIALIST EDUCATORS IN GAMES, ANIMATION & FILM VFX

2021 Subject & Assessment Guide

Intermediate Game Development

ICT30120

Certificate III in Information, Digital Media and Technology

Game Development Foundations

academy of interactive entertainment
Sydney Melbourne Canberra Adelaide Lafayette Seattle Online

Table of Contents

Intermediate Game Development

Units of Competency

The units of competency that are covered in this subject are as follows:

ICTPRG435 - Write scripts for software applications

Assessment processes and competency evidence requirements are described in the *Assessment Criteria* section below. If you have prior or other evidence against competency you should discuss this with your trainer.

Subject Overview

Overall Learning Outcomes

Subject Description

This subject aims to teach you the required knowledge and skills to use your own textures within videogames.

You will learn basic skills in creating your own assets using industry standard image editing tools. You will then use these images within a videogame that you will develop under the direction of your trainer.

Through developing this game, you will learn more about developing games with Unity3D and gain skills in using its systems and tools to develop various interactive sequences.

Industry Relevance

Game development requires many different skills, from programming to art, and in some situations a developer is required to know both skills to adequate levels, especially within independent studios and small teams.

Assumed Knowledge

- Knowledge of computer use
- Basic knowledge and skills with Unity3D
- Basic programming skills using C#

Learning Components Guide

Your learning in this subject will be achieved through the following components: The study hours may vary.

Learning Component	Duration	Description
Classroom Activity	60 hours	Presentations, group work and tutorials
Individual Skills/Knowledge Development	10 hours	Self-paced practice exercises on creating and using assets, and using advanced features of Unity3D
Project Work	20 hours	Self-paced project work implementing a game within Unity3D incorporating new features you have learned

Assessment Criteria

Assessment Description

Assessment Milestones

Please refer to your Class Schedule for actual dates on your campus

General Description

For this assessment you will be working on an individual game project. For this project there are no set tutorials for you to follow, giving you much more freedom in the type of game you create.

A suggested project brief has been provided for you in *Appendix 1*, though you are free to create any game of your choosing provided it meets the assessment requirements.

As part of this project you will design at least one algorithm in pseudocode before implementing your design in a C# game script within Unity 3D. When implementing your pseudocode, you will comment your final C# code in accordance with industry standards as described by your trainer.

Evidence Specifications

This is the specific evidence you must prepare for and present by your assessment milestone to demonstrate you have competency in the above knowledge and skills. The evidence must conform to all the specific requirements listed in the table below. You may present additional, or other evidence of competency, but this should be as a result of individual negotiation with your trainer.

Your Roles and Responsibilities as a Candidate

- Understand and feel comfortable with the assessment process.
- Know what evidence you must provide to demonstrate competency.
- Take an active part in the assessment process.
- Collect all competency evidence for presentation when required.

This table defines what you need to produce as evidence of competency.

Assessment Tasks & Evidence Descriptions
1. Design Algorithms Evidence that includes: • Design of an algorithm, detailed in pseudocode • Implementation of pseudocode algorithm in C# in a game project • Algorithm commented according to industry best practice

2. Create Digital Game
Evidence that includes:
• The successful creation of a videogame as specified by your instructor that includes:
  ○ A Graphical User Interface (GUI) and Heads-Up Display (HUD)
  ○ At least one custom game script implementing the algorithm designed in rubric item 1 above

Assessment Instructions for Candidate

METHOD OF ASSESSMENT

Assessment is a cumulative process which takes place throughout a subject. A 'competent' or 'not yet competent' decision is generally made at the end of a subject. Your assessment will be conducted by an official AIE qualified assessor. This may be someone other than your trainer. The evidence you must prepare and present is described

above in this assessment criteria document. This evidence has been mapped to the units of competency listed at the beginning of this document. Assessments will be conducted on a specific milestone recorded above in this assessment guide document.

ASSESSMENT CONDITIONS

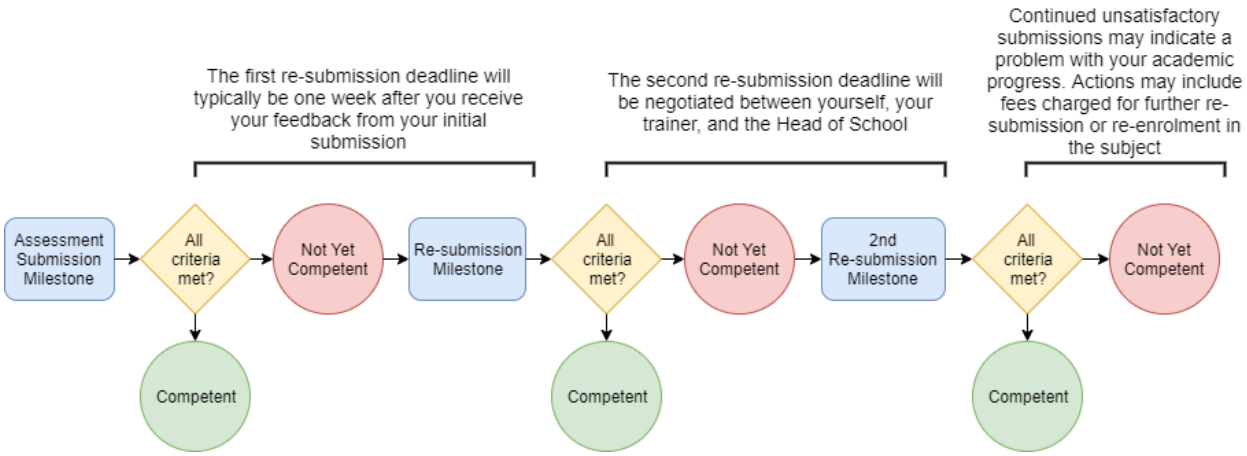
Formative assessment takes place as your trainer observes the development of your work throughout the subject and, although the assessor is likely to be aware of the evidence you are submitting, it is your responsibility to be prepared for the interview where a competency judgement is made (summative assessment). Forgetting something, or making a small mistake at the time of the milestone assessment, can be corrected. However, the assessor may choose to assess other candidates who are better prepared and return to you if time permits.

Upon completion of the assessment you will be issued with feedback and a record of the summative assessment and acknowledge that you have received the result. If you are absent for the nominated assessment milestone (without prior agreement or a sufficiently documented reason) you will be assessed as not yet competent.

GRADING

The assessment you are undertaking will be graded as either *competent* or *not yet competent*.

REASSESSMENT PROCESS



If you are assessed as being not yet competent you will receive clear, written and oral feedback on what you will need to do to achieve competence. You will be given a reassessment milestone no more than one (1) week later to prepare your evidence. If you are unsuccessful after your reassessment, you may be asked to attend a meeting with your Head of School to discuss your progress or any support you may need and further opportunities to gain competency.

REASONABLE ADJUSTMENTS

We recognise the need to make reasonable adjustments within our assessment and learning environments to meet your individual needs. If you need to speak confidentially to someone about your individual needs, please contact your trainer.

FURTHER INFORMATION

For further information about assessment and support at AIE, please refer to the assessment and course progress sections of your learner handbook.

Software

Core

Unity3D

Unity3D is a modern game engine used by many developers worldwide for developing games and interactive media. It is free to use, with paid premium options available. For this course you are able to use the free license.

- http://unity3d.com

Visual Studio

Microsoft's Visual Studio is the recommended IDE for this subject. Other IDEs may be employed if desired as the content of this subject is designed to be cross-platform and IDE agnostic, however we cannot guarantee that all subject material will operate as intended on other IDEs and platforms.

- https://visualstudio.microsoft.com/vs/community/

Appendix 1

Assessment – Recommended Brief: *Top-Down Space Shooter*

This brief has been designed around the specific, cumulative evidence you must prepare for and present by your assessment milestone to demonstrate you have competency in the requisite knowledge and skills for this subject. Submissions conforming to this brief will provide the specific evidence listed in the table titled *Assessment and Competency Requirements* at the end of this assessment item.

This brief is a suggestion only, and learners are encouraged to explore and make a game that matches their interests and ability. All learners are encouraged to discuss their project ideas with their trainer.

You may present additional, or other evidence of competency, but this should be as a result of individual negotiation with your trainer.

General Description

For this assessment item, you are tasked with making a single-player 3D top-down shooter.

This is a single-player game where the player must destroy asteroids and enemy ships, while avoiding taking damage.

You may wish to visit the following web sites for ideas on game mechanics and implementation guides:

- https://learn.unity.com/project/space-shooter-tutorial
- http://shmuptheory.blogspot.com/2010/02/anatomy-of-shmup.html

Requirements

While you are generally free to implement this game any way you like, there are some requirements that must be included in your game to achieve competency in this module.

- Your game is to be implemented in the Unity 3D game engine
- Import and use 3D models
- Add User Interface components to display in-game information, such as the player's score or damage (i.e., make a Heads-Up Display)
- Design and implement an algorithm that will spawn a new asteroid at pre-determined time intervals
- Add other features or algorithms to you game to extend the core gameplay
    - For example, you could add an asteroid-seeking missile

Submission

You will need to submit the following:

- A PC Release build of your game that can execute as a stand-along program
- Your complete Unity 3D project

- Be sure to remove any temporary build folders, and the *Library* folder.
  Only project files, source code files, and any resource files used should be included in your submission.

Package all files in a single compressed archive file (.zip, .7z, or .rar)

Submission Checklist

A single-player game in Unity 3D	
The game contains a 3D model with custom textures	
The game contains imported 3D models	
The game contains a HUD that displays in-game information, updated in real-time	
The game includes at least one 3D light	
Game executes without crashing	
A WebGL build has been made and included in the submission	
A release executable has been made and included in the submission	
Project files and source code are included in the submission	
All files are packaged in a single compressed archive	

