



COMP3180

Virtual Reality and Advanced Game Development

Session 2, In person-scheduled-weekday, North Ryde 2026

School of Computing

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General Information

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Credit points

10

Prerequisites

COMP2150 and COMP2160

Corequisites

Co-badged status

Unit description

In this unit you will undertake self-driven learning to extend your specialist game development knowledge through scaffolded research and development (R&D) on an advanced project topic of your choosing. You will produce and evaluate a portfolio piece as a significant deliverable to demonstrate this work and support industry transition. Potential R&D topics include extended reality (XR - consisting of virtual, augmented and mixed reality) and natural controls, as well as advanced games user research and software engineering topics. A focus on design and development for virtual reality (VR) platforms is encouraged, with relevant tools and hardware available during the unit's extended practical sessions.

Learning in this unit enhances student understanding of global challenges identified by the United Nations Sustainable Development Goals ([UNSDGs](#)) Quality Education; Decent Work and Economic Growth; Industry, Innovation and Infrastructure; Sustainable Cities and Communities.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

Learning Outcomes

On successful completion of this unit, you will be able to:

ULO1: Demonstrate knowledge of advanced game design and development topics.

ULO2: Apply software engineering techniques to collaboratively develop complex game architectures for emerging platforms.

ULO3: Independently research and critically analyse game development techniques for emerging platforms.

ULO4: Practice user-centred design to evaluate and optimise game development approaches.

ULO5: Effectively communicate complex ideas across a range of media.

General Assessment Information

Assessment Latest Release Dates

- Research Presentation – Monday August 3rd
- Research Proposal – Monday August 17th
- Final Project – Monday September 14th

Requirements to pass this unit:

To pass this unit you must:

- Achieve a total mark equal to or greater than 50%.

Late Assessment Submission Policy

Unless a Special Consideration request has been submitted and approved, a 5% penalty (of the total possible mark of the task) will be applied for each day a written report or presentation assessment is not submitted, up until the 7th day (including weekends). After the 7th day, a grade of '0' will be awarded even if the assessment is submitted. The submission time for all uploaded assessments is 11:55 pm. A 1-hour grace period will be provided to students who experience a technical concern. For any late submission of time-sensitive tasks, such as scheduled tests/exams, performance assessments/presentations, and/or scheduled practical assessments/labs, please apply for [Special Consideration](#). For example, if the assignment is worth 20 marks (of the entire unit) and your submission is late by 19 hours (or up to 23 hours 59 minutes 59 seconds), 1 mark (5% of 20 marks) will be deducted. If your submission is late by 24 hours (or up to 47 hours 59 minutes 59 seconds), 2 marks (10% of 20 marks) will be deducted, and so on.

Assessments where Late Submissions will be accepted

In this unit, late submissions will be accepted as follows:

- Research Presentation - ACCEPTED, Standard Late Penalty applies
- Research Report - ACCEPTED, Standard Late Penalty applies
- Final Project - ACCEPTED, Standard Late Penalty applies

Special Consideration

The [Special Consideration Policy](#) aims to support students who have been impacted by short-term circumstances or events that are serious, unavoidable and significantly disruptive, and which may affect their performance in assessment. If you experience circumstances or events that affect your ability to complete the assessments in this unit on time, please inform the convenor and submit a Special Consideration request through <http://connect.mq.edu.au/>.

Assessment Tasks

Name	Weighting	Hurdle	Due	Groupwork/Individual	Short Extension	AI Approach
Research Presentation	20%	No	23/08/2026	Individual	No	Observed
Research Proposal	30%	No	20/09/2026	Individual	Yes	Open
Final Project	50%	No	08/11/2026	Individual	Yes	Open

Research Presentation

Assessment Type ¹: Presentation task

Indicative Time on Task ²: 10 hours

Due: **23/08/2026**

Weighting: **20%**

Groupwork/Individual: Individual

Short extension ³: No

AI Approach: Observed

You will present a research topic and the outcome of a literature review to the class and propose an idea for your project.

On successful completion you will be able to:

- Demonstrate knowledge of advanced game design and development topics.
- Independently research and critically analyse game development techniques for emerging platforms.
- Effectively communicate complex ideas across a range of media.

Research Proposal

Assessment Type ¹: Written Submission

Indicative Time on Task ²: 30 hours

Due: **20/09/2026**

Weighting: **30%**

Groupwork/Individual: Individual

Short extension ³: Yes

AI Approach: Open

You will propose a short research & development project based on your background reading. This will include learning goals, plans for a prototype to be developed and a planned method for evaluating the prototype.

On successful completion you will be able to:

- Demonstrate knowledge of advanced game design and development topics.
- Independently research and critically analyse game development techniques for emerging platforms.
- Practice user-centred design to evaluate and optimise game development approaches.
- Effectively communicate complex ideas across a range of media.

Final Project

Assessment Type ¹: Portfolio

Indicative Time on Task ²: 45 hours

Due: **08/11/2026**

Weighting: **50%**

Groupwork/Individual: Individual

Short extension ³: Yes

AI Approach: Open

You will complete your planned R&D project and submit a portfolio that includes the developed research prototype, an evaluation report, a development diary, and a reflection on the project outcomes and your individual learning experience.

On successful completion you will be able to:

- Demonstrate knowledge of advanced game design and development topics.
- Apply software engineering techniques to collaboratively develop complex game architectures for emerging platforms.
- Practice user-centred design to evaluate and optimise game development approaches.
- Effectively communicate complex ideas across a range of media.

¹ If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- [Academic Success](#) for academic skills support.

² Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation.

³ An automatic short extension is available for some assessments. Apply through the [Service Connect Portal](#).

Delivery and Resources

Classes

All classes start in Week 1.

The primary scheduled learning activities are practical classes, which focus on studio-based project research and development, guided by teaching staff. Students will have the option to complete this work individually or collaboratively in small groups (based around research topic). All practical classes are on campus.

Weekly online Q&A/lecture learning activities are also scheduled, and additional lectures and learning activities may also be provided online via iLearn and Echo 360.

Required and Recommended Texts

There is no prescribed text for this unit.

Unit Website

Please login to iLearn at <http://ilearn.mq.edu.au/>

Technologies Used and Required

The technologies used and required will depend on your chosen/assigned advanced game development topic area. You will have access to the games lab computers and the software on them, which will feature the Unity and Unreal game development engines and other creative tools. See iLearn for the versions of software provided on the lab computers. Extra software may be added to these computers if a good case can be made for it. You will also have access to necessary hardware in the games lab, such as VR equipment and controllers.

The use of personal computing devices and software to support R&D on your advanced game development project and complete assessment will likely be required (for example, when the lab is not open/available). Sourcing and compatibility with the provided lab resources will be students' responsibility, though teaching staff will aim to support access to hardware and tools where practicable.

Use of Generative AI

The use of Generative AI including LLMs and image generators is permitted in this unit where this use does not undermine the Learning Outcomes of the unit and specific assessment tasks. All use of Generative AI must be appropriately acknowledged, evidenced and referenced.

The particularities and affordances of Generative AI usage will vary between assessments. Please consult the assessment specifications of each task for details. Use of Generative AI that does not adhere to assessment-specific details may result in a breach of Academic Integrity.

For more information on the use of Generative AI in your studies, please see the FSE Gen AI module: https://ishare.mq.edu.au/prod/file/c6b0caa4-23dd-4372-b07d-5a03379fc3e8/1/FSE_Gen_AI-module.zip/content/index.html#/

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](https://policies.mq.edu.au) (<https://policies.mq.edu.au>). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- [Academic Appeals Policy](#)
- [Academic Integrity Policy](#)
- [Academic Progression Policy](#)
- [Assessment Policy](#)
- [Fitness to Practice Procedure](#)
- [Assessment Procedure](#)
- [Complaints Resolution Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#)

Students seeking more policy resources can visit [Student Policies](https://students.mq.edu.au/support/study/policies) (<https://students.mq.edu.au/support/study/policies>). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

To find other policies relating to Teaching and Learning, visit [Policy Central \(https://policies.mq.edu.au\)](https://policies.mq.edu.au) and use the [search tool](#).

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/admin/other-resources/student-conduct>

Results

Results published on platform other than [eStudent](#), (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit connect.mq.edu.au or if you are a Global MBA student contact globalmba.support@mq.edu.au

Academic Integrity

At Macquarie, we believe [academic integrity](#) – honesty, respect, trust, responsibility, fairness and courage – is at the core of learning, teaching and research. We recognise that meeting the expectations required to complete your assessments can be challenging. So, we offer you a range of resources and services to help you reach your potential, including free [online writing and maths support](#), [academic skills development](#) and [wellbeing consultations](#).

Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

Academic Success

[Academic Success](#) provides resources to develop your English language proficiency, academic writing, and communication skills.

- [Ask a Study Coach](#)
- [Access StudyWISE](#)
- [Upload an assignment to Studiosity](#)
- [Complete the Academic Integrity Module](#)

The Library provides online and face to face support to help you find and use relevant information resources.

- [Subject and Research Guides](#)
- [Ask a Librarian](#)

Student Services and Support

Macquarie University offers a range of [Student Support Services](#) including:

- [IT Support](#)

- [Accessibility and disability support](#) with study
- Mental health [support](#)
- [Safety support](#) to respond to bullying, harassment, sexual harassment and sexual assault
- [Social support including information about finances, tenancy and legal issues](#)
- [Student Advocacy](#) provides independent advice on MQ policies, procedures, and processes

Student Enquiries

Got a question? Ask us via the [Service Connect Portal](#), or contact [Service Connect](#).

IT Help

For help with University computer systems and technology, visit <https://students.mq.edu.au/support/technology/service-desk>.

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.

Changes from Previous Offering

We value student feedback to be able to continually improve the way we offer our units. As such we encourage students to provide constructive feedback via student surveys, to the teaching staff directly, or via the FSE Student Experience & Feedback link in the iLearn page.

Student feedback from the previous offering of this unit drew attention to issues developing for the Virtual Reality headsets. To address this, we will be providing extra resources to demonstrate VR development workflow to simplify and streamline this process. The hardware loan system has been established to provide students with access to headsets outside of class.

Unit information based on version 2026.03 of the [Handbook](#)