**C O U R S E   O U T L I N E**

# SGD213 Professional Games Programming

**School:** School of Business and Creative Industries

## 2026 │ Trimester 1

| UniSC Sunshine Coast | BLENDED LEARNING | Most of your course is on campus but you may be able to do some components of this course online. |
| Online | ONLINE | You can do this course without coming onto campus, unless your program has specified a mandatory onsite requirement. |

*Please go to usc.edu.au for up to date information on the teaching sessions and campuses where this course is usually offered.*

## 1. What is this course about?

### 1.1. Description

This course extends the fundamental concepts of games programming knowledge and skills acquired in SGD102. This course focusses explicitly on concepts of object-oriented programming within a professional game development context. The course develops a comprehensive understanding of games programming design principles and how to apply them in professional game development systems. You will engage with and use technical terminology, theoretical concepts, and academic approaches to game programming, acquiring the skills and knowledge needed to design and develop games programming solutions.

### 1.2. How will this course be delivered?

| ACTIVITY | HOURS | BEGINNING WEEK | FREQUENCY |
|---|---|---|---|
| **BLENDED LEARNING** | | | |
| **Learning materials** – Interactive online learning activities. | 1hr | Week 1 | 12 times |
| **Tutorial/Workshop 1** – Scheduled face to face workshops. | 2hrs | Week 1 | 12 times |
| **ONLINE** | | | |
| **Learning materials** – Interactive online learning activities. | 1hr | Week 1 | 12 times |
| **Tutorial/Workshop 1** – Scheduled online workshops (Recorded). | 2hrs | Week 1 | 12 times |

### 1.3. Course Topics

Programming in game development teams

Object-oriented programming concepts

The four principles of object-oriented programming (encapsulation, abstraction, inheritance, and polymorphism)

Object-oriented programming in a realtime game engine

Publishing games for multiple platforms

## 2. What level is this course?

> 200 Level (Developing)

Building on and expanding the scope of introductory knowledge and skills, developing breadth or depth and applying knowledge and skills in a new context. May require pre-requisites where discipline specific introductory knowledge or skills is necessary. Normally, undertaken in the second or third full-time year of an undergraduate programs.

## 3. What is the unit value of this course?

> 12 units

## 4. How does this course contribute to my learning?

| COURSE LEARNING OUTCOMES | GRADUATE QUALITIES |
|---|---|
| On successful completion of this course, you should be able to... | Completing these tasks successfully will contribute to you becoming... |
| 1  Analyse, evaluate, and develop programs in the C# language. | Creative and critical thinker Empowered |
| 2  Work in a structured and modular manner, consistent with the needs of a team development environment. | Engaged |
| 3  Communicate programming concepts with simplicity and precision when collaborating with non-programmers, both verbally and in the form of a technical specification. | Empowered Engaged |
| 4  Create code to specification in developing and applying games programming solutions. | Creative and critical thinker Empowered |

## 5. Am I eligible to enrol in this course?

Refer to the UniSC Glossary of terms for definitions of "pre-requisites, co-requisites and anti-requisites".

### 5.1. Pre-requisites

> SGD102 or ICT112 or SGD203

### 5.2. Co-requisites

> Not applicable

### 5.3. Anti-requisites

> Not applicable

### 5.4. Specific assumed prior knowledge and skills (where applicable)

> Not applicable

## 6. How am I going to be assessed?

### 6.1. Grading Scale

> Standard Grading (GRD)

High Distinction (HD), Distinction (DN), Credit (CR), Pass (PS), Fail (FL).

### 6.2. Details of early feedback on progress

The course material is structured in a way that students are progressively working towards their assessment pieces. These progressive works are based on weekly learning material which is delivered in a way that is initially demonstrated, then applied. During application, the teacher will provide support and feedback for the student's growth in each subject matter.

## 6.3. Assessment tasks

| DELIVERY MODE | TASK NO. | ASSESSMENT PRODUCT | INDIVIDUAL OR GROUP | WEIGHTING % | WHAT IS THE DURATION / LENGTH? | WHEN SHOULD I SUBMIT? | WHERE SHOULD I SUBMIT IT? |
|---|---|---|---|---|---|---|---|
| All | 1 | Artefact - Technical and Scientific | Individual | 30% | N/A | Refer to Format | Online Submission |
| All | 2 | Artefact - Creative, and Written Piece | Group | 30% | 1500 words & architecture diagrams | Week 7 | Online Submission |
| All | 3 | Artefact - Technical and Scientific, and Written Piece | Individual | 40% | 500 words & code artefacts | Week 12 | Online Submission |

**All - Assessment Task 1:** Code clean-up

| | |
|---|---|
| **GOAL:** | When working in a structured team environment, you will inevitably work on programs written by other programmers, and they will work on yours. Poorly written code results in inefficiency and confusion. In this task, you will evaluate and debug flawed code, follow a specified style, and provide useful comments where necessary. |
| **PRODUCT:** | Artefact - Technical and Scientific |
| **FORMAT:** | Each piece of debugged code must be submitted separately to Canvas, by the end of weeks 3, 5, and 7. Each sub-task is weighted evenly, and worth 10% of the total weighting for the course. This is an individual task. |

| **CRITERIA:** | No. | | Learning Outcome assessed |
|---|---|---|---|
| | 1 | Adherence to the provided coding standards. | ① ② ④ |
| | 2 | Functioning of code. | ① ② ④ |
| | 3 | Clarity of commenting. | ① ② ③ ④ |
| | 4 | Efficiency of code. | ① ④ |
| **GENERIC SKILLS:** | | | |

**All - Assessment Task 2:** Developing a tech spec

| GOAL: | Miscommunication within a team, especially between programmers and non-programmers, often leads to inefficiency, confusion, and programs which do not perform as expected. In this task, you will develop a client specification document, which simply and precisely translates "client-speak" into "programmer-speak". You must not only distil the client's expectations, you must also describe the technical requirements of the project, adding structure to the process (architecture) and reducing the likelihood of miscommunication. |
|---|---|
| PRODUCT: | Artefact - Creative, and Written Piece |
| FORMAT: | The specification document should be as descriptive as necessary, but as concise as possible, 3-4 pages, including relevant architecture diagrams (in any consistent format of your choice, such as UML). Examples will be provided in class. This is a group assessed task. |

| CRITERIA: | No. | | Learning Outcome assessed |
|---|---|---|---|
| | 1 | Analysis of available Architectural Options. | ① ② ④ |
| | 2 | Detailed communication of chosen Architecture. | ① ③ |
| | 3 | Identification of Constraints and Risks. | ① ② ③ ④ |
| | 4 | Contact Management. | ① ② ③ ④ |
| | 5 | Correct Identification of Client Requirements. | ① ② ③ ④ |
| GENERIC SKILLS: | | | |

**All - Assessment Task 3:** Implementing a tech spec

| GOAL: | Developing a client requirements specification clarifies the expectations of the client as well as the technical requirements of the project. In this task, now implement a portion of C# code accordingly, within the Unity 3D Game Engine. |
|---|---|
| PRODUCT: | Artefact - Technical and Scientific, and Written Piece |
| FORMAT: | This is a group task with individual assessment. You will work with the rest of your group from Assessment Task 2 to ensure that your sections of code interact with the rest of the project as expected. Submit the project as a group, and each individual will also be required to submit their own self-assessment. |

| CRITERIA: | No. | | Learning Outcome assessed |
|---|---|---|---|
| | 1 | Ability to implement functional requirements. | ① ② ④ |
| | 2 | Adherence to the provided coding standards. | ① ② ④ |
| | 3 | Code readability. | ① ② ③ ④ |
| | 4 | Utilisation of design patterns. | ① ② ③ ④ |
| | 5 | Critical self-evaluation and contribution to team work. | ① ② ③ ④ |
| GENERIC SKILLS: | | | |

## 7.  Directed study hours

A 12-unit course will have total of 150 learning hours which will include directed study hours (including online if required), self-directed learning and completion of assessable tasks. Student workload is calculated at 12.5 learning hours per one unit.

## 8.  What resources do I need to undertake this course?

Please note: Course information, including specific information of recommended readings, learning activities, resources, weekly readings, etc. are available on the course Canvas site– Please log in as soon as possible.

8.1. Prescribed text(s) or course reader

> There are no required/recommended resources for this course.

8.2. Specific requirements

This course requires some free professional games development software which is provided at UniSC campuses for student use. If you elect to do this course online, you will need to install this software on your own computer or attend a campus at which it is available. The software requires a large amount of disk space and a higher-end computer.

## 9. How are risks managed in this course?

Health and safety risks for this course have been assessed as low. It is your responsibility to review course material, search online, discuss with lecturers and peers and understand the health and safety risks associated with your specific course of study and to familiarise yourself with the University's general health and safety principles by reviewing the online induction training for students, and following the instructions of the University staff.

## 10. What administrative information is relevant to this course?

10.1. Assessment: Academic Integrity

Academic integrity is the ethical standard of university participation. It ensures that students graduate as a result of proving they are competent in their discipline. This is integral in maintaining the value of academic qualifications. Each industry has expectations and standards of the skills and knowledge within that discipline and these are reflected in assessment.

Academic integrity means that you do not engage in any activity that is considered to be academic fraud; including plagiarism, collusion or outsourcing any part of any assessment item to any other person. You are expected to be honest and ethical by completing all work yourself and indicating in your work which ideas and information were developed by you and which were taken from others. You cannot provide your assessment work to others. You are also expected to provide evidence of wide and critical reading, usually by using appropriate academic references.

In order to minimise incidents of academic fraud, this course may require that some of its assessment tasks, when submitted to Canvas, are electronically checked through Turnitin. This software allows for text comparisons to be made between your submitted assessment item and all other work to which Turnitin has access.

10.2. Assessment: Additional Requirements

**Eligibility for Supplementary Assessment**

Your eligibility for supplementary assessment in a course is dependent of the following conditions applying:
(a) The final mark is in the percentage range 47% to 49.4%; and
(b) The course is graded using the Standard Grading scale

10.3. Assessment: Submission penalties

Late submissions may be penalised up to and including the following maximum percentage of the assessment task's identified value, with weekdays and weekends included in the calculation of days late:
(a) One day: deduct 5%;
(b) Two days: deduct 10%;
(c) Three days: deduct 20%;
(d) Four days: deduct 40%;
(e) Five days: deduct 60%;
(f) Six days: deduct 80%;
(g) Seven days: A result of zero is awarded for the assessment task.

The following penalties will apply for a late submission for an online examination:
Less than 15 minutes: No penalty
From 15 minutes to 30 minutes: 20% penalty
More than 30 minutes: 100% penalty

10.4. SafeUniSC

UniSC is committed to a culture of respect and providing a safe and supportive environment for all members of our community. For immediate assistance on campus contact SafeUniSC by phone: 07 5430 1168 or using the SafeZone app. For general enquires contact the SafeUniSC team by phone 07 5456 3864 or email safe@usc.edu.au.

The SafeUniSC Specialist Service is a Student Wellbeing service that provides free and confidential support to students who may have experienced or observed behaviour that could cause fear, offence or trauma. To contact the service call 07 5430 1226 or email studentwellbeing@usc.edu.au.

## 10.5. Study help

For help with course-specific advice, for example what information to include in your assessment, you should first contact your tutor, then your course coordinator, if needed.

If you require additional assistance, the Learning Advisers are trained professionals who are ready to help you develop a wide range of academic skills. Visit the Learning Advisers web page for more information, or contact Student Central for further assistance: +61 7 5430 2890 or studentcentral@usc.edu.au.

## 10.6. Wellbeing Services

Student Wellbeing provide free and confidential counselling on a wide range of personal, academic, social and psychological matters, to foster positive mental health and wellbeing for your academic success.

To book a confidential appointment go to Student Hub, email studentwellbeing@usc.edu.au or call 07 5430 1226.

## 10.7. AccessAbility Services

Ability Advisers ensure equal access to all aspects of university life. If your studies are affected by a disability, learning disorder mental health issue, injury or illness, or you are a primary carer for someone with a disability or who is considered frail and aged, AccessAbility Services can provide access to appropriate reasonable adjustments and practical advice about the support and facilities available to you throughout the University.

To book a confidential appointment go to Student Hub, email AccessAbility@usc.edu.au or call 07 5430 2890.

## 10.8. Links to relevant University policy and procedures

For more information on Academic Learning & Teaching categories including:

- Assessment: Courses and Coursework Programs
- Review of Assessment and Final Grades
- Supplementary Assessment
- Central Examinations
- Deferred Examinations
- Student Conduct
- Students with a Disability

For more information, visit https://www.usc.edu.au/explore/policies-and-procedures#academic-learning-and-teaching

## 10.9. Student Charter

UniSC is committed to excellence in teaching, research and engagement in an environment that is inclusive, inspiring, safe and respectful. The Student Charter sets out what students can expect from the University, and what in turn is expected of students, to achieve these outcomes.

## 10.10. General Enquiries

**In person:**

- **UniSC Sunshine Coast** - Student Central, Ground Floor, Building C, 90 Sippy Downs Drive, Sippy Downs
- **UniSC Moreton Bay** - Service Centre, Ground Floor, Foundation Building, Gympie Road, Petrie
- **UniSC SouthBank** - Student Central, Building A4 (SW1), 52 Merivale Street, South Brisbane
- **UniSC Gympie** - Student Central, 71 Cartwright Road, Gympie
- **UniSC Fraser Coast** - Student Central, Student Central, Building A, 161 Old Maryborough Rd, Hervey Bay
- **UniSC Caboolture** - Student Central, Level 1 Building J, Cnr Manley and Tallon Street, Caboolture

**Tel:** +61 7 5430 2890

**Email:** studentcentral@usc.edu.au