



**MONASH** University  
Information Technology

**FIT2048**  
**Game implementation and techniques**

**Unit Guide**

**Semester 1, 2010**

The information contained in this unit guide is correct at time of publication. The University has the right to change any of the elements contained in this document at any time.

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# Table of Contents

<u>FIT2048 Game implementation and techniques - Semester 1, 2010</u> .....	1
<u>Chief Examiner:</u> .....	1
<u>Lecturer(s) / Leader(s):</u> .....	1
<u>Caulfield</u> .....	1
<u>Additional communication information:</u> .....	1
<u>Introduction</u> .....	2
<u>Unit synopsis</u> .....	2
<u>Learning outcomes</u> .....	2
<u>Contact hours</u> .....	2
<u>Workload</u> .....	3
<u>Unit relationships</u> .....	3
<u>Prerequisites</u> .....	3
<u>Prohibitions</u> .....	3
<u>Teaching and learning method</u> .....	4
<u>Teaching approach</u> .....	4
<u>Timetable information</u> .....	4
<u>Tutorial allocation</u> .....	4
<u>Unit Schedule</u> .....	4
<u>Unit Resources</u> .....	6
<u>Prescribed text(s) and readings</u> .....	6
<u>Recommended text(s) and readings</u> .....	6
<u>Required software and/or hardware</u> .....	6
<u>Equipment and consumables required or provided</u> .....	6
<u>Study resources</u> .....	6
<u>Assessment</u> .....	7
<u>Overview</u> .....	7
<u>Faculty assessment policy</u> .....	7
<u>Assignment tasks</u> .....	7
<u>Examination</u> .....	8
<u>Due dates and extensions</u> .....	9
<u>Late assignment</u> .....	9
<u>Return dates</u> .....	9
<u>Appendix</u> .....	10

# **FIT2048 Game implementation and techniques - Semester 1, 2010**

## **Chief Examiner:**

**Mr Derrick Martin**

Assistant Lecturer

Phone: +61 3 990 47131

## **Lecturer(s) / Leader(s):**

### **Caulfield**

**Derrick Martin (Lecturer)**

Contact hours: Wednesday 10-1 (Caulfield), Friday 1-3 (Berwick)

**Ruben Hopmans (Tutor)**

## **Additional communication information:**

Contact may be made via phone, email or in person.

## Introduction

Welcome to FIT2048, Game Implementation and Techniques. This unit is a 6 point unit in the Games Major of the Bachelor of Information Technology and Systems. The unit has been designed to provide you with an understanding of the theory behind game creation, the historic context of game design and an ability to deconstruct existing games and analyse their features. It provides experience in creating a simple game in a small team of peers.

## Unit synopsis

This unit examines the fundamental issues of games development. The history of games and the games industry is studied. A variety of games genre are explained and contrasted. Topics include the different contributions from members of the games development team, the types of hardware used across various platforms for game implementation, the role of games engines, the importance of physics in ensuring realism and the manner in which system analysis can be applied to games development.

## Learning outcomes

At the completion of this unit students will:

- be able to describe the history and current status of the games industry;
- be able to discuss a range of common games genres and characteristics/examples of each (eg. RPG, first person shooters, educational, adventure);
- be able to describe the roles of different components of the games development team - audio, design, production, programming, visual arts and business/sales;
- be able to describe the processes used to balance game design in order to enhance game playability;
- be able to apply systems analysis and design principles to the development of games;
- be able to describe several common games engines which are currently in use in the market place and how games are developed based on these;
- be able to explain the role of game physics in areas such as movement, friction, gravity and collision in enhancing realism;
- be aware of the ethical issues involved with games development;
- develop a positive approach to teamwork, seeing game development as a team task;
- given a game scenario, use gameplay balancing techniques to eliminate design flaws and improve player experience;
- be able to create a game level (an interactive environment) using a set game engine;
- using a supplied game engine be able to write scripting code to manipulate actions
- prepare a critical analysis of selected game;
- prepare a design document for a game in the three main areas of user interaction, the internal structure of the game and the program structures which will be required;
- further develop group working skills as a member of a project team.

## Contact hours

2 hrs lectures/wk, 2 hrs laboratories/wk

## **Workload**

To be eligible to pass and maintain your enrolment in FIT2048 you must attend 80% of your tutorial sessions. If you are absent for more than two tutorial sessions you must supply a medical certificate or other appropriate documentation.

If you are finding problems with this requirement please ensure you speak to your unit adviser as early as possible.

Due to the nature of group work in this subject, it is expected that all students will attend 100% of classes.

This unit, like all Monash units, is built on the assumption that you will spend twelve hours a week attending classes and working on your assignments.

Attendance at tutorials without any work outside of this allocated class time will not be sufficient.

You should ensure that you can make this commitment before you embark on this subject

There will be a two-hour lecture and a two-hour laboratory class each week. To get the most out of this time you should make sure you have with you a copy of the project you are working on with you.

## **Unit relationships**

### **Prerequisites**

FIT1002 or MMS1802

### **Prohibitions**

MMS2102

## Teaching and learning method

### Teaching approach

This unit will be provided via lectures and laboratory classes.

Lectures: During the lecture, you will be introduced to key theoretical concepts behind game design, production and analysis.

Laboratory: Laboratory classes will be used to work through practical exercises related to assignments

The approach to teaching and learning include a weekly two-hour lecture and a two-hour laboratory. Additionally, each student should spend a minimum of 8 to 12 hours for personal study every week and should allocate up to 5 hours per week in some weeks for use of a computer, including time for newsgroup and discussion.

### Timetable information

For information on timetabling for on-campus classes please refer to MUTTS, <http://mutts.monash.edu.au/MUTTS/>

### Tutorial allocation

On-campus students should register for tutorials/laboratories using the Allocate+ system: <http://allocate.its.monash.edu.au/>

### Unit Schedule

Week	Date*	Topic	Study guide	Key dates
1	01/03/10	Game Concepts	Chapters 1-3	
2	08/03/10	Storytelling and Narrative	Chapters 6-8	
3	15/03/10	Game Genres	Chapters 13-20	
4	22/03/10	Gameplay	Chapters 9-11	
5	29/03/10	Ethics of Gaming	Chapter 4	
Mid semester break				
6	12/04/10	Physics and Level Design	Chapter 12	
7	19/04/10	Online Games	Chapter 21	Group presentation of Game Design due
8	26/04/10	Cinema in games	Chapter 7-8	
9	03/05/10	AI, Flexible game mechanics	Chapter 20	
10	10/05/10	Mod Development	Chapter 5	
11	17/05/10	The Future of Gaming	Chapter 22	
12	24/05/10	Exam revision		Group Assessment game level due
13	31/05/10	no lecture		

\*Please note that these dates may only apply to Australian campuses of Monash University. Off-shore students need to check the dates with their unit leader.

## Unit Resources

### Prescribed text(s) and readings

Rollings, Andrew and Ernest Adams, 'Game Design and Development: Fundamentals of Game Design', Pearson, 2006, ISBN: 0-13-168747-6

Text books are available from the Monash University Book Shops. Availability from other suppliers cannot be assured. The Bookshop orders texts in specifically for this unit. You are advised to purchase your text book early.

### Recommended text(s) and readings

Rollings, Andrew and Ernest Adams, 'On Game Design', New Riders, 2003, ISBN: 1592730019

### Required software and/or hardware

Unreal Runtime Engine 2226.20.02, Epic Games

Software may be:

- downloaded from  
[http://udn.epicgames.com/Files/UE2/Runtime/UE2Runtime-22262002\\_Demo.exe](http://udn.epicgames.com/Files/UE2/Runtime/UE2Runtime-22262002_Demo.exe)
- purchased at academic price at good software retailers

### Equipment and consumables required or provided

Students studying off-campus are required to have the minimum system configuration specified by the Faculty as a condition of accepting admission, and regular Internet access. On-campus students, and those studying at supported study locations may use the facilities available in the computing labs. Information about computer use for students is available from the ITS Student Resource Guide in the Monash University Handbook.

### Study resources

Study resources we will provide for your study are:

The FIT2048 web site on Moodle, where lecture slides, weekly lab requirements, assessment specifications and supplementary material will be made available.



## Assessment

### Overview

Examination (2 hours): 40%; In-semester assessment: 60%

### Faculty assessment policy

To pass a unit which includes an examination as part of the assessment a student must obtain:

- 40% or more in the unit's examination, and
- 40% or more in the unit's total non-examination assessment, and
- an overall unit mark of 50% or more.

If a student does not achieve 40% or more in the unit examination or the unit non-examination total assessment, and the total mark for the unit is greater than 50% then a mark of no greater than 49-N will be recorded for the unit.

To be eligible to pass and maintain your enrolment in FIT2048 you must attend 80% of your tutorial sessions. If you are absent for more than two tutorial sessions you must supply a medical certificate or other appropriate documentation. Absence of more than two tutorial sessions will result in a 5% penalty per additional undocumented absence in the final mark.

If you are finding problems with this requirement please ensure you speak to your unit adviser as early as possible.

Due to the nature of group work in this subject, it is expected that all students will attend 100% of classes.

This unit, like all Monash units, is built on the assumption that you will spend twelve hours a week attending classes and working on your assignments.

Attendance at tutorials without any work outside of this allocated class time will not be sufficient.

You should ensure that you can make this commitment before you embark on this subject.

### Assignment tasks

#### Assignment coversheets

Assignment coversheets are available via "Student Forms" on the Faculty website:

<http://www.infotech.monash.edu.au/resources/student/forms/>

You MUST submit a completed coversheet with all assignments, ensuring that the plagiarism declaration section is signed.

**Assignment submission and return procedures, and assessment criteria will be specified with each assignment.**

- **Assignment task 1**

**Title:**

Group presentation of Game Design

**Description:**

Presenting your game design to peers in a class environment

**Weighting:**

10%

**Due date:**

Week 7

- **Assignment task 2**

**Title:**

Group Assessment: Game Level

**Description:**

Creation of a game level using an existing game engine, working with a team of peers

**Weighting:**

30%

**Due date:**

Week 12

**Remarks:**

5% of the assessment of this task will consist of completion of weekly progress milestones as negotiated by each group with their tutor.

Submission of assignments is done using assignment drop-boxes. The exact due date will be dependent on homework progress.

- **Assignment task 3**

**Title:**

Individual Assessment

**Description:**

Students will examine existing games, detailing the application of game design principles in the game and analysing the effectiveness of the principles in the games via discussions in class forums.

**Weighting:**

20%

**Due date:**

Ongoing weekly tasks

**Remarks:**

Submission of assignments is done using the Moodle online forums to discuss analysis findings

## Examination

- **Weighting:** 40%

**Length:** 2 hours

**Type (open/closed book):** Closed book

**See Appendix for End of semester special consideration / deferred exams process.**

## **Due dates and extensions**

Please make every effort to submit work by the due dates. It is your responsibility to structure your study program around assignment deadlines, family, work and other commitments. Factors such as normal work pressures, vacations, etc. are not regarded as appropriate reasons for granting extensions. Students are advised to NOT assume that granting of an extension is a matter of course.

Students requesting an extension for any assessment during semester (eg. Assignments, tests or presentations) are required to submit a Special Consideration application form (in-semester exam/assessment task), along with original copies of supporting documentation, directly to their lecturer within two working days before the assessment submission deadline. Lecturers will provide specific outcomes directly to students via email within 2 working days. The lecturer reserves the right to refuse late applications.

A copy of the email or other written communication of an extension must be attached to the assignment submission.

Refer to the Faculty Special consideration webpage or further details and to access application forms: <http://www.infotech.monash.edu.au/resources/student/equity/special-consideration.html>

## **Late assignment**

Assignments received after the due date will be subject to a penalty of 10% per day late, measured 24 hours after the submission time.

Assignments received later than one week after the due date will not normally be accepted.

## **Return dates**

Students can expect assignments to be returned within two weeks of the submission date or after receipt, whichever is later.

## Appendix

Please visit the following URL: <http://www.infotech.monash.edu.au/units/appendix.html> for further information about:

- Continuous improvement
- Unit evaluations
- Communication, participation and feedback
- Library access
- Monash University Studies Online (MUSO)
- Plagiarism, cheating and collusion
- Register of counselling about plagiarism
- Non-discriminatory language
- Students with disability
- End of semester special consideration / deferred exams