INFT3960 – Game Production

Lec 01

Module 1.1

Course Overview

Course Overview - Topics

- Course Description
- Assessments
- Unity
- C#

Course Outline – Description

Course Description

Building on prior programming knowledge, students will use available game engine technology to construct the operating elements of a game design.

This course examines the techniques used in bringing a game to the point of distribution and transforming a design into a reality.

Course Outline – Description

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Students will also come to experience and understand the relevance of other implementation issues such as physics engines, rendering tools, audio components, and the integration of the output from the art production tools used to create the game objects, world elements and backgrounds.

Course Outline – Description

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Introduction to game development (a bit of game design)

Best way to learn how to make games is to make games

You will prototype your own games using Unity3d with C#

12 Lectures – Applied Skills - Design, Coding, (Lecs 1-7)
- Theory - Core Concepts (Lecs 8-12)

11 Tutorials – Focussed on making / testing your game

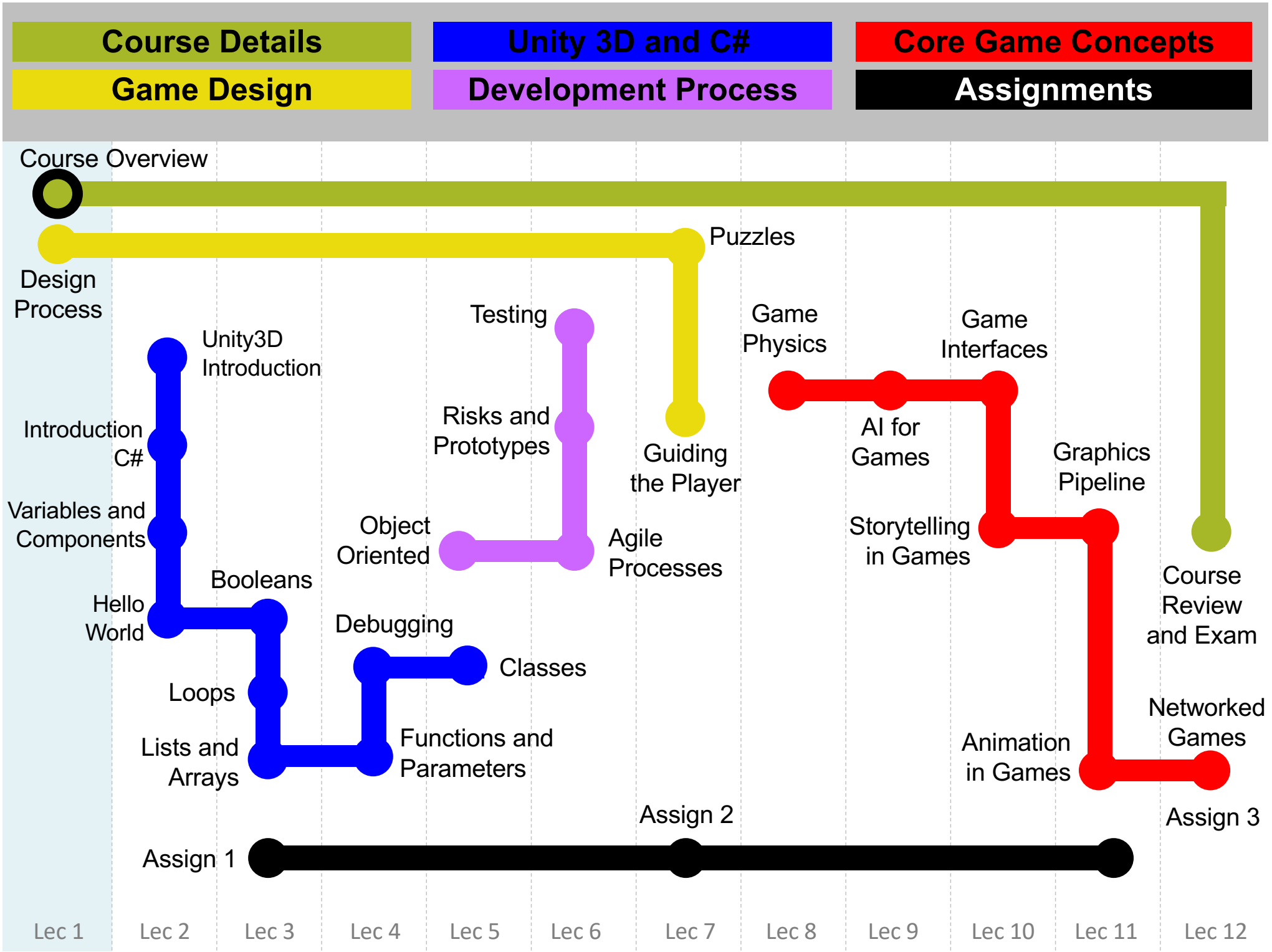
Course Overview

Lec	Start Week	Modules	Topics	Assignments
1	3 Aug	Mod 1.1, 1.2	Course Overview, Design Process	
2	10 Aug	Mod 2.1, 2.2, 2.3, 2.4	Unity3D Introduction, Introduction C#, Variables and Components, Hello World	
3	17 Aug	Mod 3.1, 3.2, 3.3	Booleans, Loops, Lists and Arrays	Assign 1 21 Aug, 11:00 pm
4	24 Aug	Mod 4.1, 4.2	Functions and Parameters, Debugging	
5	31 Aug	Mod 5.1, 5.2	Classes, Object Oriented	
6	7 Sep	Mod 6.1, 6.2, 6.3	Agile Processes, Risks and Prototypes, Testing	
7	14 Sep	Mod 7.1, 7.2	Puzzles, Guiding the Player	Assign 2 18 Sep, 11:00 pm
8	21 Sep	Mod 8.1	Game Physics	
9	12 Sep	Mod 9.1	AI for Games	
10	19 Oct	Mod 10.1, 10.2	Game Interface, Storytelling in Games	
11	26 Oct	Mod 11.1, 11.2	Graphics Pipeline, Animation in Games	Assign 3 1 Nov, 11:00pm
12	2 Nov	Mod 12.1, 12.2	Networked Games, Course Review	

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8:00 - 9:00	INFT3960 Lecture ICT 328				
9:00 – 10:00		INFT3960 **Lab 1** ICT 397 Fayeem			
10:00 - 11:00					
11:00 - 12:00					
12:00 - 1:00		INFT3960 **Lab 2** ICT 397 Nathan			
1:00 - 2:00					
2:00 - 3:00		INFT3960 **Lab 3** ICT 397 Nathan			
3:00 - 4:00					
4:00 - 5:00					
5:00 - 6:00					
6:00 - 7:00					
7:00 - 8:00					
8:00 - 9:00					

No labs/tuts in week 1


Course Details
Course Overview (Lec 1)
Course Review and Exam (Lec 12)
Game Design
Design Process (Lec 1)
Puzzles (Lec 7)
Guiding the Player (Lec 7)
Unity 3D and C#
Unity3D Introduction (Lec 2)
Introduction C# (Lec 2)
Variables and Components (Lec 2)
Hello World (Lec 2)
Booleans (Lec 3)
Loops (Lec 3)
Lists and Arrays (Lec 3)
Functions and Parameters (Lec 4)
Debugging (Lec 4)
Classes (Lec 5)
Development Process
Object Oriented (Lec 5)
Agile Processes (Lec 6)
Risks and Prototypes (Lec 6)
Testing (Lec 6)
Core Game Concepts
Game Physics (Lec 8)
AI for Games (Lec 9)
Game Interfaces (Lec 10)
Storytelling in Games (Lec 10)
Graphics Pipeline (Lec 11)
Animation in Games (Lec 11)
Networked Games (Lec 12)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Unity 3D and C#
Core Game Concepts
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Lists and Arrays
Functions and Parameters
Animation in Games
Assign 2
Assign 3
Assign 1
Lec 1
Lec 2
Lec 3
Lec 4
Lec 5
Lec 6
Lec 7
Lec 8
Lec 9
Lec 10
Lec 11
Lec 12

Why Study games?

Games are awesome!

Games are a multi-billion dollar industry

Game *technology* is increasingly being used in many industries

Game *techniques* (gamification) are being used in many industries (serious games)

Many of the core concepts we will learn are broadly applicable to many different industries, especially programming, art, teamwork, communication skills

It's fun!

Course Outline – Assumed

Assumed Knowledge

SENG1110 – Object Oriented Programming **OR**
INFT1004 – Introduction to Programming

Students are expected to have at least a basic level of computer programming skills as well as basic computer literacy. This will include basic competency with the use of Interactive Development Environment and 'Office' style applications (word processing, presentation and spreadsheet), graphics production tools and internet/web browsers.

Course Outline – Assumed

Assumed Knowledge

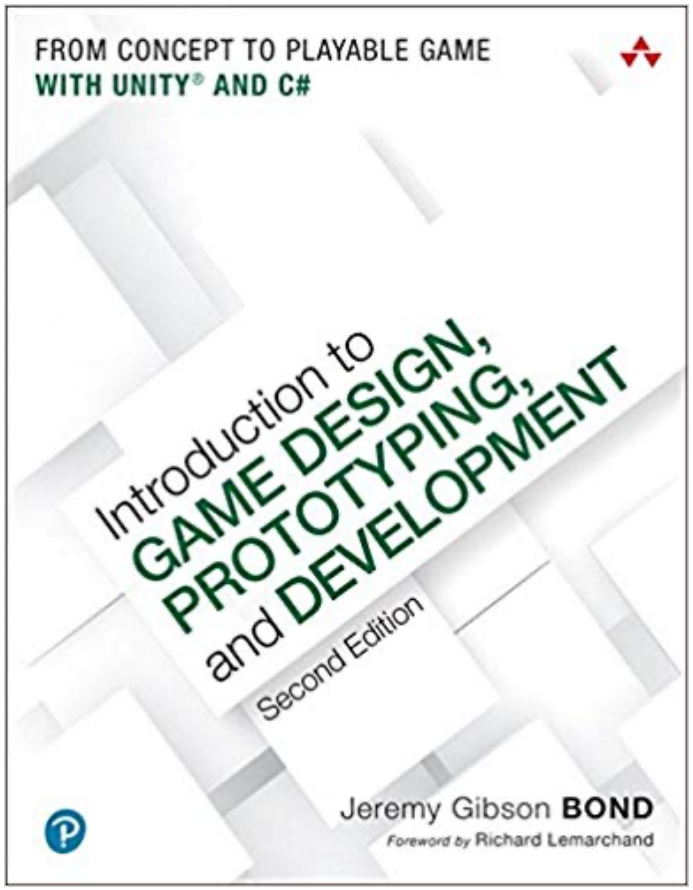
SENG1110 – Object Oriented Programming **OR**
INFT1004 – Introduction to Programming

Students are expected to have at least a basic level of computer programming skills as well as basic computer literacy. This will include basic competency with the use of Interactive Development Environment and 'Office' style applications (word processing, presentation and spreadsheet), graphics production tools and internet/web browsers.

(WARNING: game production involves programming!)

Course Outline - Textbook

Required Textbook



Introduction to Game Design, Prototyping, and Development: From Concept to Playable Game with Unity and C# - 2nd Edition

Author: Jeremy Gibson
Publisher: Addison-Wesley Professional; 2 edition (2017)

Course Outline - Assessments

	Assessment Name	Due Date	Weighting
1	Assignment 1 – Game Design Report	21 Aug, 11:00 pm	10%
2	Assignment 2 – First Game Challenge Prototype	18 Sep, 11:00 pm	20%
3	Assignment 3 – Final Game Prototype	1 Nov, 11:00 pm	30%
4	Final Exam	Exam Period	40%

Notes:
You need to attend tutorials to complete most of these assessment items (1-3). Detailed feedback will be also be provided during tutorials.

You must be available for full exam period (including supplementary period)

Assessment 1

Game Design Report

WEIGHT 10%

DUE: 21 Aug, 11:00 pm

SUBMISSION:
Online – Digital Submission through Blackboard
In Class - Presentation In Class – during tutorial

FEEDBACK:
Categorised marks and minimal feedback - online. Detailed project specific feedback provided in class during tutorial. You must attend the tutorial to receive this feedback.

Assessment 1

Game Design Report

You will be asked to briefly analyse aspects of an existing game

You will be asked to come up with your own 2D platformer game concept.

Must be done as an individual

Assessment 2

First Game Challenge Prototype

WEIGHT 20%

DUE: 18 Sep, 11:00 pm

SUBMISSION:
Online – Digital Submission through Blackboard
In Class - Presentation In Class – during tutorial

FEEDBACK:
Categorised marks and minimal feedback - online. Detailed project specific feedback provided in class during tutorial. You must attend the tutorial to receive this feedback.

Assessment 2

First Game Challenge Prototype

You will create a simple level and a player character to move through it

You will also set up some simple begin and end screens

A basic character moving through a basic level will get basic marks – there is scope here to put your own stamp on both the code and assets.

Can be done as a group of two. Partner up for assignment 2 and 3!

Assessment 3

Final Game Prototype

WEIGHT 30%

DUE: 1 Nov, 11:00 pm

SUBMISSION:
Online – Digital Submission through Blackboard
In Class – Demonstration In Class – during tutorial

FEEDBACK:
Categorised marks and minimal feedback - online. Detailed project specific feedback provided in class during tutorial. You must attend the tutorial to receive this feedback.

Assessment 3

Final Game Prototype

Extend your player movement level to add challenge and gameplay.

Here is where you can start heavily differentiating your product, with puzzles, enemies or non player characters!

Can be done in groups of 2 (if you have done this in assignment 2 – first prototype.)

Assessment 4

Final Exam

WEIGHT 40%

DUE: Formal Exam Period

FEEDBACK:
NO feedback provided.
Final Mark on Grade Release

Notes:
You need to attend tutorials to complete most of these assessment items (1-3).
Detailed feedback will be also be provided during tutorials.

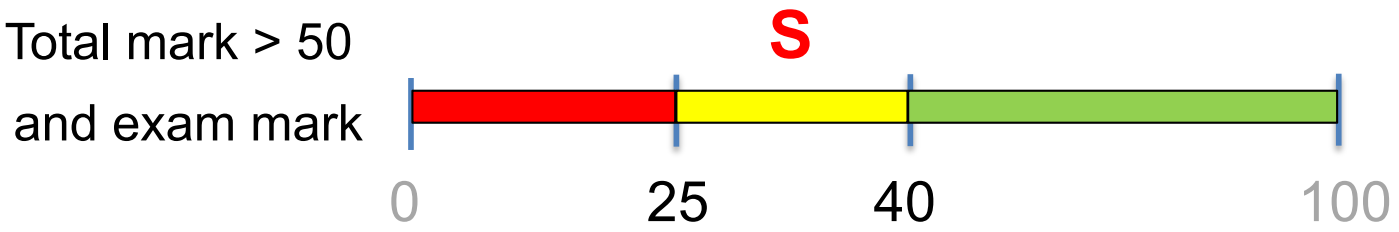
You must be available for full exam period **(including supplementary period**)

Supplementary Exam

Formal Examination: Minimum Grade / Mark Requirement –

Students must obtain a specified minimum grade / mark in this assessment item to pass the course. Students whose overall mark in the course is 50% or more, but who score less than 40% in the compulsory item and thus fail to demonstrate the required proficiency, will be awarded a Criterion Fail grade which will show as FF on their formal transcript.

However, students in this position who have scored at least 25% in the compulsory assessment item will be allowed to undertake a supplementary 'capped' assessment in which they can score at most 50% of the possible mark for that item.



You must be available for full exam period **(including supplementary period)**

Why a 2D game?

Doesn't require skills in character modelling, rigging and animation to get started

Simpler mathematically

Simpler design

More relevant than ever with the rise of mobile platforms and indie scene

Still a huge scope for creativity in world design, game mechanics, sound and AI

Why a 2D platformer?

ID games, Nintendo, Sega, Activision all started or were boosted by hit 2D Platformers

Lots of scope for creativity in art, story, game mechanics

Lots of inspiration to draw upon in classic and indie gaming

Still much loved by the indie scene (eg Braid, Shovel Knight, Super Meat Boy, Waking Mars, VVVVVV etc)

Why Unity 3D?

Freely/Cheaply available for indie development

Cross Platform

Widely used in industry

Uses standard language (C#, Javascript)

Why C#?

Well known language with excellent support

Many uses outside of the game industry

Compiled, so many errors are easy to detect, fast

Strong Variable Typing

Managed memory, so you don't have to worry so much about your own memory management

Industry standard (in a lot of different industries)

Downloading Unity

A free version of Unity is available from Unity's official website: http://unity3d.com/download

This might be handy if you want too work on your machine.

A licensed copy is required when Unity is part of a course - this will be available on Virtual Machines

I advise version 2019.4 - which is what I'll be using

(We'll be using it next Lecture - I would start now!)

Downloading Unity

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website: http://unity3d.

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System requirements

OS: Windows 7 SP1+, 8, 10, 64-bit versions only; Mac OS X 10.12+; Ubuntu 16.04, 18.04, and CentOS 7.

GPU: Graphics card with DX10 (shader model 4.0) capabilities.

Downloading Unity

Student

Learn the tools and workflows professionals use on the job

Free

Sign up

Eligibility:
Students enrolled in an accredited educational institution of legal age to consent to the collection and processing of their personal information, e.g., age 13 in the US, 16 in the EU. Must join the GitHub Student Developer Pack to be verified.

Personal

Start creating with the free version of Unity

Free

Get started Learn more

Eligibility:
Revenue or funding less than $100K in the last 12 months