Video Game Design Course Outline

Unit 1 Introduction to programming

* Setting up a project
* Syntax
* The importance of properly commenting code
* Move Box Program Implementation Plan
* Controlling an objects position on the screen
* Detecting when an object hits a screen edge
* Wrapping objects from one side of the screen to the other
* Using scancode() to read in key presses

Unit 2 First Game Classic Pong

* Implementation plan
* Setting up the project
* Declaring variables and setting up skeleton structure
* Adding left paddle checking for top and bottom of screen edge
* Adding right paddle checking for top and bottom of screen edge
* Adding ball and checking for collision with paddle or movement past paddle
* Adding score and title to screen
* Speeding up the ball slowly after each paddle hit
* Limiting the maximum possible speed of the ball
* Adding code to a program for the purpose of debugging and analysis
* Dressing up the screen to make the game environment visually pleasing

Unit 3 The Tile Game

* Implementation plan
* Setting up the project
* Declaring variables and setting up skeleton structure
* Introduction to function calls and parameter passing
* Introduction to using Dark Basic to slice up an image into 16 tiles
* Introduction to using data to determine valid moves
* Use of iterative processes to layout tiles on background screen
* Adding code to make tiles move
* Adding game logic to determine when tile puzzle is complete
* Having students swap their own game and background graphic into the game engine
* Present your game to the class. Discuss how you made your graphics. (This satisfies **Leadership** requirements)

Unit 4 The Darkanoid Game (Classic Break Out game)

* Implementation plan
* Setting up the project
* Declaring variables and setting up skeleton structure
* Use of Data for level design
* Adding code to lay the level out on the screen
* Add the code that makes the ball move
* Detecting when the ball hits a block, remove the block, update score, reverse direction of ball
* Detecting when the ball goes past the player, decrementing lives
* Adding 4 power-ups
* Testing and debugging
* Creating own graphics and swapping them for teacher provided graphics
* Brainstorm new functionality and features and incorporate them into your program.
* Present your game to the class. Discuss how you made your graphics. (This satisfies **Leadership** requirements)

Unit 5 The Astro Gunner Game

* Implementation plan
* Setting up the project
* Declaring variables and setting up skeleton structure
* Introduction to Sprite Sheets
* Coding up main
* Coding up functions testing after each function is coded
* Test all aspects of game
* Design own graphics including ship sprite sheet and explosion sprite sheet
* Incorporate own graphics into game.
* Add capability of enemy ship to fire missile that can destroy player ship
* Brainstorm new functionality and features and incorporate them into your program.
* Present your game to the class. Discuss how you made your graphics. (This satisfies **Leadership** requirements)

Unit 6 Battle Checkers Game

* Implementation plan
* Setting up the project
* Declaring variables and setting up skeleton structure
* Introduction to using 3D Models
* Working in 3D space
* Coding up main
* Coding up functions testing after each function is coded
* Test all aspects of game
* Correcting built in errors in the code
* Redesign the skin for the 3D models and apply in game
* Brainstorm new functionality and features and incorporate them into your program.
* Present your game to the class. Discuss how you made your graphics. (This satisfies **Leadership** requirements)

Unit 7 C# programming with the XNA Framework

* Introduction to C# programming
* Introduction to the XNA framework
* Coding up simple 2D games
* Testing and debugging

Unit 8 Autodesk 3DSMAX

* Introduction to the IDE
* Creating standard primitives
* Composing standard primitives to create simple models
* Basic box modeling
* Using a box model to create a human form model
* Using box modeling and composition of standard primitives to create a Klingon Bird of Prey
* Basics of keyframe animation
* Creating and animating a model of the students choice.
* Present the model to the class. (This satisfies **Leadership** requirements)