# COSC 123
# Computer Creativity

## Course Introduction

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# *Course Objectives*

1) To be creative with programming and write fun, interesting programs

2) To master fundamental programming skills of data variables, decisions, iteration, and methods

3) To learn to create stories using the Alice programming language

4) To learn the Java language, the basics of object-oriented programming, and how to create larger programs

5) To learn about graphics, events, and exceptions in Java

# How to Pass This Course

The most important things to do to pass this course:

- Attend and participate in class
  - Read notes *before* class as preparation.
- Attend the labs and do all lab assignments
  - They are for marks, and they are good practice and exam questions.

To get an "A" in this course do all the above plus:

- Spend more time practicing programming including questions in the notes and the free-form labs.

# *My Expectations*

My goal is for you to ***SHOW UP TO CLASS AND LABS*** and spend the effort to learn the material.

Although this class may be "easy" for some, you will not pass this class without effort and ***attendance***.

The course will be very straightforward – If you do the work, you will do well.

**You should practice programming outside of class/labs.**

**Your mark is 80% perspiration and 20% inspiration.**

# *The Lab Assignments*

In each lab we will work on computers on a lab assignment.

Lab assignments are worth ***20%*** of your overall grade.

Most assignments are due approximately one week after the lab.

- No late assignments will be accepted.
- An assignment may be handed in any time before the due date.
- Some lab assignments are larger and allow you to create your own programs.

Lab assignments are done in pairs (pair programming).

***The lab assignments are critical to learning the material and are designed to prepare you for the exams!***

# *Pair Programming*

All lab assignments and projects will be done using the ***pair-programming approach***.

- Students will select a partner at the start of class that will be their partner for the duration of the course.
- Students may ask the professor for help in finding a suitable partner.
- Accommodation is made for students whose partner leaves the course before its completion.
- Both students in the pair receive the same mark.

Pair programming has been shown to increase learning and satisfaction while programming.

# *Class Quizzes and Questions*

To encourage attendance and effort, ***20%*** of your overall grade is allocated to answering questions in class.

There are two types of questions:

- **10%** - for electronic questions answered using clickers
  - There will be at least 90 questions each worth 1 mark. **You need at least 70 to get the full 10%.**
  - **You must be present with your clicker to get your answers counted.**
  - The marks are pro-rated. Example: if you get 50 right you would get 50/70 = 7%.
- **10%** - for programming and written questions
  - There will be at least 40 programming and written questions.
  - **You need at least 40 points.** You get 2 points for showing a correct answer in class on or before the day it is covered, and 1 point for providing an answer within 3 days of that class.
  - **You should plan and work ahead as not all questions will be given sufficient time to complete during class time.**

# *Why are you here?*
# *Reasons Why People Take This Course*

A) I want an easy credit.

B) I want an easy Science credit (Arts Majors).

C) I want to learn how to be creative using programming.

D) COSC 122 was okay, and I am interested in more.

E) Alice and 3D worlds look pretty cool.

# *What do you expect? What Grade are You Expecting to Get?*

A) A

B) B

C) C

D) D

E) F

# *Programming Experience*
# *What is Your Programming Experience?*

A) None (or I forgot everything I have seen before)

B) I remember some of the programming in COSC 122 or have programmed on my own before.

C) I have taken COSC 111/121 or equivalent.

D) I have taken Computer Science courses beyond the 1st year.

E) I program all the time. I plan on being the next Bill Gates or Steve Jobs.

# *Why this Course is Important*

This course will make programming fun and relevant.

- Our economy, health, and entertainment is dependent on software written by programmers.
- We will learn to be creative programmers, so that we may create great software to be used by others.

Important results:

- ***Storyboarding*** – We will use Alice to tell stories with programs.
- ***Algorithmic Thinking*** – We will learn how to solve problems by specifying precise sequences of actions.
- ***Collaboration*** – We will program in teams of two to build interpersonal skills and increase our knowledge.
- ***Java Language*** – We will learn the Java programming language that can be used in many areas including future computer science courses.

# *The Essence of the Course*

If you walk out of this course with nothing else you should:

**Become a creative programmer with the ability to problem solve, perform critical thinking, and communicate precisely.**

This course is not about learning a particular language or even programming itself.

# *Introduction to Alice*

Alice is a computer environment in which you create virtual worlds containing three-dimensional characters and objects that move and interact.

Alice is an integrated development environment (IDE) – a program used to create and run another program.

Versions for Windows and Mac OS are available from the Alice website: **http://www.alice.org**.

Let's try a couple of demos!