CS119 – Foundations of Computer Science   **Spring 2024**

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Office Hours:

> 9:30 - 10:30 M
> 8:30-9:30 T
> 12:30 - 1:30 Th
> others by drop in or appointment

Course web page http://phoenix.goucher.edu/~jillz/cs119

Course Description:

Imagine that you have a big program to write and all the details are overwhelming. How should you manage all that complexity? Or imagine that you have a couple of different algorithms to solve a problem. How do you determine which algorithm is best? In this class, we will study major elements of computer science that assist in managing complexity and allow the analysis of the efficiency of algorithms. You will solve problems using recursion and prove they actually do what you want them to do using mathematical induction. You will also use common data structures such as trees, stacks, and queues.

Course Objectives:

After successful completion of this course you will be able to

- write programs using the functional programming paradigm

- measure programming resources (at an introductory level) by using asymptotic analysis

- use abstraction to manage complexity of more complex problems and capture recurring patterns

- manipulate common data structures found in computer science such as trees, stacks, and queues.

Course Resources

We do not have a textbook for this course so I will be providing you online readings. These includes notes and language resources. We will be using the programming language Haskell and using the department server. You will be able to access the server by installing the software NoMachine on your laptop.

Course Mechanics:
The heart of computer science is the solving of problems and the best way to learn is to jump in and try to solve some problems. That is why I employ active learning in my classroom. The majority of class time will be spent on both ungraded activities as well as graded lab assignments.

I try to give you a lot of feedback on how you are doing throughout the semester. One way I do that is to give short (15 minute) quizzes periodically. The lowest quiz score will be dropped and no make-ups will be given.

All dates for activities, quizzes, and exams are provided in Canvas and you are expected to adhere to all scheduled dates. If the unforeseen happens such as an illness or family emergency, you will need to contact me as early as possible to discuss if due date extensions are needed. **Do not assume that late assignments will automatically be accepted.**

Academic Dishonesty:
Turning in work that was produced by someone else is cheating and will be subject to an Honor code violation. I will give you a lot of opportunity to collaborate with your fellow students and ask me for assistance, but if you violate that trust and cheat by submitting work that is not your own you will be hurting yourself and others in the following ways:

1. You would be failing to engage in the authentic learning and mastery of the academic material and thus harming your own education.

2. You would be reducing the enjoyment of accomplishments earned through genuine effort.

3. You would be creating an environment of broken trust, which then limits the ability of students to work together meaningfully and collaboratively.

4. You would be harming your reputation and face serious consequences.

Grading:
Your course grade will be based on the following:

Quizzes	10%
Lab Assignments	30%
3 Exams (15% each)	45%
Comprehensive Final Exam	15%
Total	100%