CSCI 338 — Algorithm Design and Analysis

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instructor

- Jeremy Iverson (`jiverson002@csbsju.edu`)
- PENGL 213, (320) 363-3083
- office hours: TBD

textbook

- *Introduction to the Design and Analysis of Algorithms*, 3rd Edition, Levitin

website

- `https://csbsju.instructure.com/courses/11420`

objectives

to use different abstract methodologies to construct algorithms that solve given problems

to analyze the time and space complexity of algorithms and compare the complexity of different algorithms

to describe the complexity classes and and explain why they are important in understanding computational tractability

to write a good description and analysis of an algorithm

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evaluation

eight (8) written assignments
three (3) programming assignments

- do your own work
- use each other as resources only
- due dates are strict (no partial credit for late assignments)

three (3) topical exams and one (1) cumulative

- closed book / open note

point distribution

- written assignments: 3% each
- programming assignments: 4% each
- exams: 13% each
- final: 25%

need more info...

see `course syllabus`!

a good question

why bother?

- better debugger
- better programmer
- better problem-solver

a look ahead

develop a framework for analyzing algorithms

study some of the fundamental algorithm design techniques

look at a sample of the important algorithms in CS

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activity

1. which is better and why, bubble sort or merge sort?

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2. is there any circumstance when bubble sort is better than merge sort?

remember that this is a 300-level course

a bit of parting advice

remember that this is a 300-level course
if something is confusing, tell me

teaching philosophy

Your job is to empower those you teach; when you do for them what they should be doing for themselves, you create dependency rather than empowerment.

It is easy to give in to the frustration that results from seeing amazing possibilities for the people you are teaching, and you want it more for them than they want it for themselves.

Don't give in to that frustration!
— Based on passage from "Resisting Happiness" by Matthew Kelly

questions?

activity

download this slide deck and follow the instructions on the next slide

find out what the reading is for Wednesday