

cs473: Algorithms

Lecture 1: Logistics, Motivation and Goals

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Today

- logistics
- motivation and goals

Lecture:

- cs473: Algorithms
- TR2-3:15, DCL 1310
- <https://courses.engr.illinois.edu/cs473/fa2019/>

Instructors:

- Prof. Michael A. Forbes (*miforbes*)
- Prof. Chandra Chekuri (*chekuri*)

TAs:

- Shant Boodaghians (*boodagh2*)
- Mitchell Jones (*mfjones2*)
- Yipu Wang (*ywang298*)

Office Hours (lounge between Siebel 3304 and 3232): M3, M5, T12:30, **T3:30**, F1

Resources:

- webpage: course policies, course calendar, problem sets, links to other resources
- gradescope: pset submissions, pset return, grades
- piazza: announcements, student forum, (privately) contacting course staff
- videos: lectures are recorded

Theorem

Reading the course webpage makes your more knowledgeable.

Proof.

It's on the course webpage.

Corollary

Frequently *checking the webpage/piazza makes you **even more** knowledgeable.*

Grades:

- weekly problem sets: 30%
 - due W10, on gradescope
 - **no** late psets — lowest pset scores are dropped (see webpage)
 - **collaboration:** pset0 is done *individually*, later psets may be done in groups of ≤ 3 students (see webpage)
 - **integrity:** see webpage
- midterms: 45% ($2 \times 22.5\%$)
 - 2019-10-07 7-9:30pm
 - 2019-11-11 7-9:30pm
- final: 30% (comprehensive)

pset0:

- posted!
- due next week
- complete and submit *individually*

Prerequisites:

- cs173 (discrete math), cs225 (data structures), cs374 (algorithms and models of computation)
- *OR* sufficient mathematical maturity
 - writing formal proofs of correctness
 - algorithmic thinking: recursion, reductions
 - basic data structures: balanced binary search trees, priority queues, heaps, etc
 - basic graph algorithms: reachability (DFS/BFS), undirected vs directed, strong connected components, shortest paths and Dijkstra's algorithm, minimum spanning trees
 - probability: random variables, expectation, variance
 - models of computation

References:

- course materials:
 - slides
 - board work
 - auxiliary materials — a different perspective
- additional references (see webpage)

Laptops:

- you are adults, but laptops can distract *other* students
- policy: if your screen does not lie flat on a desk/lap, please sit in the back half of the lecture hall
 - laptops do not lie flat
 - tablets are probably okay
 - smartphones are probably not okay
 - some students have accommodations

Motivation and Goals

insert boardwork here ...

- 1 Title
- 2 Today
- 3 Logistics (I)
- 4 Logistics (II)
- 5 Logistics (III)
- 6 Logistics (IV)
- 7 Logistics (V)
- 8 Motivation and Goals