

# Introduction

CSE 2320 – Algorithms and Data Structures  
University of Texas at Arlington

Last updated: 8/21/2018

# Introductions

- Alexandra Stefan
  - Appreciate: feedback, questions, office hours visits
  - Let me know of issues: cannot hear in the back, fonts too small, colors not visible,...
- Attendance
  - Not mandatory
- Textbook:
  - ***Introduction to Algorithms***, by Thomas H. Cormen, Charles E. Leiserson, Ronald E. Rivest, Clifford Stein, 3<sup>rd</sup> edition (**CLRS**). The 2<sup>nd</sup> edition is also fine.
  - Additional reference: *Algorithms in C*, Parts 1-5, by Robert Sedgewick. 3rd Edition, 2001.
    - NOTE: this textbook is usually sold as two volumes, one for parts 1-4, and one for part 5. Most of the topics covered in class are from parts 1-4.
- Privacy issues: the class is being recorded
  - Sound only from you
  - Video of me and the projector, NOT the board
  - Link accessible from Blackboard (see “Echo 360 Recordings” in left panel menu)
  - Not taught for distance education – parts of the board are not visible in the recording.

# Course web page

- VERY IMPORTANT: **course web page.**
  - The course web page will be the primary source of information about the class.
- To find the course web page:
  - Search the web for "Alexandra Stefan", and go to my home page.
  - Click on the link for the course.
- If you have any trouble finding the course web page email me.

# Homework

- **VERY IMPORTANT: Blackboard.**
  - Blackboard will be used for submitting ALL assignments.
    - **Blackboard -> Homework (in left panel menu)**
  - No submissions via e-mail, except if Blackboard is not working properly.
  - If Blackboard says the submission is late, then it is late.
  - Occasionally people submit the wrong files. YOU ARE RESPONSIBLE FOR VERIFYING you submitted the right files, and on time.
  - **Submit early** (even if it is not the final version) and **frequently**.

# Communication

- UTA email only (sent welcome email)
- Document our communication with an email
  - Send me an email to confirm a permission/agreement that I gave verbally.
    - I will remember it, I can get back to you, you have proof.
- Course website
- Blackboard
  - will be used to:
    - Submit homework
    - Solve quizzes
    - Post announcements
    - Send email
  - Homework vs announcements (see the difference)
  - See hw feedback
  - Ignore the 'Total' section in Grades. IRRELEVANT for your grade.

# Attendance and Emergencies

- Class attendance is not mandatory, but you are responsible for the material you have missed.
  - You do NOT need to let me know that you will miss a class, are late for a class or have to leave early.
  - If you are running late for a lecture, you can still come in (I prefer you attend some part of the lecture rather than none).
  - Do not be late on a regular basis. Missing the beginning will very likely cause you to not be able to follow the lecture well.

# Attendance and Emergencies

- Exam attendance is mandatory
- Emergencies should be documented and you should let me know as soon as possible (e.g. 'coming up with a cold').
- The following are NOT emergencies:
  - Computer crashes,
    - Create backups: Save your homework on a flash drive and email yourself.
  - Network failures,
    - **Submit early** (even if it is not the final version) and **frequently**.
  - Blackboard failure
    - Submit early (even if it is not the final version).
    - Check submission – download and run.
    - Let me know if Blackboard seems to be misbehaving.
    - If there is a problem with your Blackboard account, email your homework to both the TA and me.

# Syllabus

- Topics
- Grading
  - Homework (20%) & Blackboard quizzes (5%): 25%
  - 2 midterms and a final, all with equal weights, not cumulative: 75%
- Academic honesty - *See syllabus for more details.*
  - Collusion
  - Are the consequences worth it for possibly less than 10% of your final grade?
    - Parents, employer, future schools, permanent records, risk of getting expelled.
  - *The penalty for cheating or collusion in a homework or exam is a grade of 0 (for the entire exam or homework).*
- Students that require accommodations
  - Temporary or permanent
  - Please come by my office no later than the second week of this semester.
- The syllabus policies will be STRICTLY followed
  - You are RESPONSIBLE for understanding these policies,
  - If you need a particular grade (e.g. for scholarship, good standing, graduating on time).



# Example Class Score Calculation

Item	Earned score	Max score
Exam 1	90	100
Exam 2	70	100
Exam 3	96	100
Hw 1	80	100
Hw 2	120	150
Hw 3	100	100
Hw 4	175	200
Quiz 1	20	20
Quiz 2	80	80
Quiz 3	40	55
Quiz 4	40	40
Quiz 5	20	60

$$\text{ExamAvg} = (90+70+96)/3 = 85.33$$

Hw average score calculation:

$$\text{TotalMaxHwPts} = 100+150+100+200 = 550$$

$$\text{EarnedHwPts} = 80+120+100+175 = 475$$

$$\begin{aligned}\text{HwAvg} &= 100 * \text{EarnedHwPts} / \text{TotalMaxHwPts} \\ &= 100 * 475 / 550 = 86.36\end{aligned}$$

Quiz average score calculation:

$$\text{TotalMaxQuizPts} = 20+80+55+40+60$$

$$\text{EarnedQuizPts} = 20+80+40+40+20$$

$$\begin{aligned}\text{QuizAvg} &= 100 * \text{EarnedQuizPts} / \text{TotalMaxQuizPts} \\ &= 100 * 200 / 255 = 78.43\end{aligned}$$

$$\begin{aligned}\text{ClassScore} &= .75 * \text{ExamAvg} + .2 * \text{HwAvg} + .05 * \text{QuizAvg} \\ &= .75 * 85.33 + .2 * 86.36 + .05 * 78.43 \\ &\approx 85\end{aligned}$$

The class scores will probably be curved for the letter grade.

# Office hours

- You can see me and either one of the TAs.
  - Ideally equal load for each TA so if there is an “issue” with one TA do not simply see the others, but also let us know (at least let me know) so that we can address it.
- My office: ERB 625
- Times: see course webpage
- TA: see course webpage

# Next Steps in the Course

- Execution of for-loops
- Examples of algorithms.
- Continue with **time complexity** and **Big-Oh** notation.
- Review **basic data structures** (linked lists, stacks, queues, trees) and introduce new ones (heaps, graphs).
- Explore, learn and analyze more of algorithms.
  - Sorting, Searching, Recursion, Optimization Techniques (Dynamic Programming and Greedy), Graph Algorithms.