CSE222/CSE505 Data Structures and Algorithms 2023 Spring Syllabus

Meeting Times and Places

- **Lecture:** Tuesday, 13:30 – 15:30, Online (MS Teams Meeting)
- **Lecture:** Thursday, 8:30 – 10:30, Online (MS Teams Meeting)

Instructor

- Gokhan Kaya
  - Email: gokhankaya@gtu.edu.tr
  - Room: 218
  - Office Hours: Wednesday, 13:30 - 15:30

Teaching Assistants

- Sibel Gülmez
- Gizem Süngü

Management

- This course will be managed in a MS Teams team.
- You are responsible from all of the announcements made in class and/or any videos and documents published teams page of the course. You are responsible from all of the content covered in online lectures. You are responsible from all of the content and information published at MS team of the class.

Communication

- You can send emails to the instructor. **Don't use MS Teams chat facility.**
- You **have to** use your official email address otherwise your email will be **ignored**.
- Prefix of your topic line should be: `CSE222S23`.
- An online meeting is needed to be arranged if you need assistance. or, you can visit my office during office hours.

Textbooks

- Elliot Koffman, Paul Wolfgang, Data Structures: Abstraction and Design Using Java, 2E, Wiley, 2010.
- M. A. Weiss, Data Structures and Algorithm Analysis in C++, Addison Wesley, 2006.
- Cormen, Leiserton, Rivest, Introduction to Algorithms, MIT Press, 2001.

Prerequisites

- Solid C++ and Java programming skills are required
- A passing grade from CSE241 is required
  - If you do not satisfy the conditions , please talk to the instructor

Grading (Tentative)

- Items:
  - Midterm Exams(Date: in the 8^{th} or 9^{th} week of the semester)(1 count): `30%`
  - Final Exam: `35%`
  - Programming Assignments(min 8, max 10 counts): `35%`
- `NA` Conditions:
  - If the student does not submit 3 or more *Programming Assignment*, (s)he will get `NA`.
  - If the student does not meet the attendance criteria(see *Attendance* section of this document), (s)he will get `NA`.
  - If the student does not enter *midterm exam* (s)he will get `NA`.
  - If the student is dishonest about attendance, (s)he may get `NA`.

Attendance (Tentative)

- Attendance will be taken (*may* affect your grade). (attend at least 70% of the lectures)
- Check the attendance section of the university rules script. It may be updated.
- Although it is suggested, depending on the rules, you may not be required to attend the lectures.

Homework Submission and Announcements

- Some of the programming assignments will require student demonstrations. Every student is going to run his/her implementation and explain the solution.
- All the class related announcements will be made either in class or on the class team page.
- Students are required to read their emails regularly and check the team page.
- The Programming Assignments will be announced at the team page.
- The Programming Assignments will be submitted to the team page.

Cheating

- Copying someone's work (changing identifier names, order of the code etc. . .) is cheating.
- Cheating is not permitted.
- Do not cheat. Cheaters will be officially reported to the Dean's Office.
- Do not sign attendance sheet if you are not in class. (You may get `NA`, if detected).
- Do not appear to be attending to the online lecture unless you are actually attending the meeting. (You may get `NA`, if detected).

About The Course

- This course aims to introduce you some basic data structures and algorithms which are to be used as tools in designing solutions to problems.
- You will become familiar with the specification, usage, implementation and analysis of these data structures and algorithms.
- By the end of this course you should be able to:
  - Identify, implement and analyze the efficiency of the basic data structures introduced
  - Selected the most efficient data structure while designing algorithms to solve real-life problems

Topics to Be Covered

- Java Review
- Introduction to Algorithm Analysis
- Sequential Containers
- Stack
- Queue
- Recursion
- Trees
- Maps and Sets
- Graphs
- Self Balancing Trees
- Sorting