CS 317: Design and Analysis of Algorithms
Spring 2021 Syllabus

Instructor: Dr. Yanxia Jia
Time: MWF: 11:00 ~ 12:05pm
  • Join Zoom Meeting
    https://arcadia.zoom.us/j/95296664030?pwd=aWpqOC90QWpxbERoU015ZEJyR29EZz09
    Meeting ID: 952 9666 4030
    Passcode: CS317
  • You are required to turn on your camera and strongly recommended to participate in class.

Instructor Contact Information:
  E-mail: jiay@arcadia.edu

Office hours:
  - MWF 2:45 ~ 3:30pm
  - By appointment.
  I strongly encourage students to contact me to set up a zoom meeting for questions or problems that you encountered related to the course.

Course Description:

This course introduces basic methods for the design and analysis of algorithms, with an emphasis on methods useful in practice. Students will learn different algorithms for various computational problems and evaluate their performance. Main topics include:

  o Analysis of Algorithm Efficiency
  o Brute Force and Exhaustive Search
  o Divide-and-Conquer
  o Space and Time Trade-Offs
  o Dynamic Programming
  o Greedy Algorithms

Prerequisites: CS203 and either MA230 or MA330

Textbook:
Learning Resources:

- **Canvas**
  Important course materials, such as syllabus, power point slides, assignments and announcements will be posted on Canvas. I expect students to check course information on Canvas regularly.

- Tutors from the university’s learning resource network (LRN) ([https://www.arcadia.edu/academics/academic-support/learning-resource-network](https://www.arcadia.edu/academics/academic-support/learning-resource-network))
  - Xinran Wang (xwang_05@arcadia.edu)
  - Yifei Song (ysong_03@arcadia.edu)

- The Web!

Technical Requirements

You will need the following in order to participate in this course:

- Computer or tablet
- Reliable internet connection
- Microphone/Webcam
- Access to Canvas using a supported web browser

**Software:**
- Eclipse IDE or Visual Studio Code (Java in Visual Studio Code)
- Oracle JDK (Choose JDK Download)

Class Attendance:

You are expected to attend classes regularly. Should you have to miss a class meeting, please contact me to notify me of your absence prior to the class, and it is your responsibility to find out what has been taught that day and make up the work. In case of emergency, please contact me by E-mail as soon as you can.

Assignments

There will be non-programming assignments and Java programming assignments during this semester. The submitted file name should indicate your name and the assignment number, for example, JohnSmith_Homework1.zip, or JohnSmith_Programming1.docx.

- For programming assignments, zip up the project folder (For Eclipse: not the workspace folder) and submit it through Canvas. Your programs should follow the style guidelines.
  - Submitted code must be free of compile errors; otherwise, you will receive a very low grade.
If this is a group assignment, one submission is enough for each group, but be sure to add a comment listing all group members’ names and roles in the beginning part of your program.

Programming assignments take time. Please start early and ask for help if needed. If you wait until the day before the deadline to ask for help, you might not be able to get help before the deadline.

If you need my help with a specific programming assignment, please either submit your code to Canvas or share it with me by Google Drive ahead of time. Please do not send your project as an Email attachment. You can have multiple submissions for each assignment.

For non-programming assignments, you can submit either a PDF/Word document (preferred) or a scanned hand-written copy. If you choose to submit a scanned copy, you must write neatly. No credit will be given to answers that I can’t read.

All assignments must be submitted. All programming assignments will be graded. A selected set of non-programming assignments/problems will be graded, but completing them all are crucial for mastering the subject, and similar problems might appear in the midterm/final exams.

Late Policy

Late assignments will receive a deduction of 10% per day (24 hours) up to two days (48 hours). Submissions later than 48 hours after the due date will receive a grade of 0.

Exams

There will be multiple quizzes. The score for the lowest quiz will be dropped, to take into account sicknesses or bad days. There will be no other early or late or make-up quizzes. A missed quiz results in a score of zero for that quiz.

There will be a comprehensive final exam. Attendance on quizzes and the final exam is mandatory. For details of the final exams, please refer to: https://www.arcadia.edu/academics/registrar/final-exam-schedule

Evaluation:

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<thead>
<tr>
<th>Attendance/Participation</th>
<th>5%</th>
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<tbody>
<tr>
<td>Quizzes</td>
<td>20%</td>
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<tr>
<td>Assignments</td>
<td>55%</td>
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<tr>
<td>Final Exam</td>
<td>20%</td>
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Academic Honesty
You are expected to adhere to the code of academic honesty of Arcadia University.

You are expected to adhere to the code of academic honesty of Arcadia University. All work must be your own. You may discuss the main ideas of a given assignment with other students, but you must write actual solutions by yourself. For group assignments, group members can share information within the group.

The following behaviors are absolutely not allowed:
- copying another student’s/group’s work, even if you modify it.
- sharing your work with another student (for individual assignments) or group (for group assignments).

If you want to use code from previous semesters or other code resources, such as example programs found on the Web as part of your solutions, be sure to contact me for approval. If the instructor approves it, then you must add reference links of the code source in the beginning of your program.

If two people/groups share the same code or a significant amount of implementation details, both parties will be considered as conducting plagiarism. Please keep in mind that inadvertent plagiarism is plagiarism. If you are not sure, check with your instructor. Finally, I reserve the right to ask you to explain your work to me.

Important Dates

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<tr>
<th>Event</th>
<th>Dates</th>
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<tr>
<td>Course changes-drop/add</td>
<td>Jan. 25 ~ Feb. 5</td>
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<td>Course withdrawal with adviser’s approval</td>
<td>Feb. 6 ~ Apr. 16</td>
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<td>Spring vacation</td>
<td>Mar. 16 ~ 18</td>
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<td>Deadline for removal of pass/fail option</td>
<td>Mar. 25</td>
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<td>Course withdrawal by petition (WP/WF if approved)</td>
<td>Apr. 17 ~ May 17</td>
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<td>Priority-registration for Fall 2021</td>
<td>Apr. 12 ~ 23</td>
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<td>Reading day – no classes or final exams</td>
<td>May 10 (Tue)</td>
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<td>Final Exam day</td>
<td>9am ~ noon, May 12 (Wed)</td>
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Title IX Statement (a New Federal Requirement)

Arcadia University is committed to providing a learning, living, and working environment that is free from discrimination. The University has an Interim Policy Prohibiting Sexual Harassment and Sexual Misconduct detailing our commitment to preventing and addressing such behavior. I understand the impact that sexual harassment and sexual misconduct can have and am committed to doing my part to foster an environment that is safe and equitable.

Please know that all faculty on campus are mandatory reporters. This means that if you disclose an experience of sexual harassment or sexual misconduct to me outside of a classroom discussion, a writing assignment, or a University-approved research project, I must share what you reported to me with Arcadia’s Title IX Coordinator. This does not mean that you will have to pursue an investigation or go through a grievance process. Even if you do not choose these options, the Title IX Office can provide supportive measures and other resources to you.
If you or someone you know has experienced sexual harassment or sexual misconduct, please know that you are not alone. If you would like to speak to someone confidentially, confidential resources are provided on the Office of Equity and Civil Rights website.