COMP610 – Data Structures and Algorithms – Spring 2025

**Professor:** Maryam Jalali [(mjalalita@csun.edu](mailto:(mjalalita@csun.edu)– JD4445)

**Lecture Days/Times:** TuTh 10:00AM - 11:15AM

**Lecture Location:** JD 3520

**Office Hours Days:** By appointment only – Online via Zoom

**Suggested Texts:** Algorithm Design – Kleinberg & Tardos

# Course Objectives:

* Refresh/extend undergraduate level design strategies.
* Be able to analyze and prove results about algorithms.
* Understand fundamental limits on computing.
* Understand and apply strategies to attack computationally difficult problems.
* Be exposed to open problems in the field

# Tentative Topics:

# A refresher on basic algorithmic principles

* + Big-*O*, Big-Ω, Big-Θ
  + Basic Graph Algorithms
  + Greedy Algorithms
  + Divide & Conquer Algorithms
  + Dynamic Programming Algorithms
  + Network Flow Algorithms

# (Questions from these topics will be on the exams, we do a quick review during the first two weeks of the classes. Prerequisite of the class is COMP 482/Math 482/ Typical upper division algorithms class). It is your responsibility to make sure that you have taken the related perquisite.

# P/NP & Intractability

# Polynomial Time Reductions

# Approximation Algorithms

# Online Algorithms

# Local Search Algorithms

# Randomized Algorithms

# Linear Programming

**Grading:**

Your grade is based on the following components. Canvas will be only used for posting the grades of the exams, and assignemnts. At any point of semester, if you want to estimate your performance in the class, you must use the following table.

All re-grading requests must be made within two classes of when the work was first returned on Canvas.

The exact number of assignments has not been set, as this will depend somewhat on how the class progresses. Make-up exams must be arranged prior to the scheduled date and will be allowed only at the discretion of the instructor.

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| Homeworks | 15% |
| Exam | 35% |
| Paper Presentation | 15% |
| Final Project | 35% |

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| A | 92% | A- | 90% | B+ | 88% | B | 82% | B- | 80% | C+ | 78% |
| C | 72% | C- | 70% | D+ | 68% | D | 62% | D- | 60% | F | 0% |

**Attendance:** University policy is that students are expected to attend all class meetings. Stu- dents who regularly attend usually perform better than those who do not, but attendance will **not** be recorded and will not play a direct role in assigning grades. Students who miss a class meeting are still responsible for the information presented (there is no obligation for a separate re-presentation of the material missed).

**Course Etiquette:**

[Please check this document.](https://docs.google.com/document/d/1rde-Bd0EAWGtPqqsXLPmPQjBjdZDYInlY8_rPHVQsKw/edit?usp=sharing)

**Academic Honesty:**

Plagiarism and Academic Honesty While collaboration is allowed on assignments, you are responsible for all of your own work. You may not take code from online sources and submit it as your own. No discussion whatsoever is allowed during exams, except with the instructor. Any violations can result in a failing grade for the assignment, or potentially failing the course for egregious cases. A report will also be made to the Dean of Academic Affairs. Students who repeatedly violate this policy across multiple courses may be suspended or even expelled.

**Accessibility, Academic, and Other Support Resources for Students:**

[**https://docs.google.com/document/d/1MFULw4Ybpyu3FliHUClzjxmsHxCGSBFRApNxycQTCHw/edit?usp=sharing**](https://docs.google.com/document/d/1MFULw4Ybpyu3FliHUClzjxmsHxCGSBFRApNxycQTCHw/edit?usp=sharing)

**Course Material:**

All the course material will be posted on Canvas (<https://canvas.csun.edu> ). Any questions about a homework/exam grade should be addressed within **two** days of posting. After two days, all grades are final.

**Disabled Students:**

"If you have a disability and need accommodations, please register with the Disability Resources and Educational Services (DRES) office or the National Center on Deafness (NCOD). The DRES office is located in Bayramian Hall, room 110 and can be reached at (818) 677-2684. NCOD is located on Bertrand Street in Jeanne Chisholm Hall and can be reached at (818) 677-2611. If you would like to discuss your need for accommodations with me, please contact me to set up an appointment."

**Changes to Syllabus:**

Changes may be needed to this syllabus and to the course plan. All such changes will be announced in class and will be announced via email. Students are responsible for this information.