
GEORGE MASON UNIVERSITY
SCHOOL OF COMPUTING
DEPARTMENT OF COMPUTER SCIENCE
CS583: ANALYSIS OF ALGORITHMS
FALL 2023
INSTRUCTOR: ERION PLAKU

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1 General Information

Classroom	Enterprise Hall 178
Day and Time	Tuesday, 4:30pm-7:10pm
Schedule Type	Lecture, in person
Credit Hours	3
Required Prerequisites	CS 310 and CS 330 and MATH 125
Grading	This course is graded on the Graduate Regular scale
Instructor	Dr. Erion Plaku Associate Professor Office Nguyen Engineering Building 4423 Web https://cs.gmu.edu/~plaku/ E-mail plaku@gmu.edu Office Hours Tuesday, 11:00am–1:00pm
Teaching Assistant	TBD

2 Course Description

GMU Catalog: Topics include analyzing sequential and parallel algorithmic strategies such as greedy methods, divide and conquer strategies, dynamic programming, search and traversal techniques, and approximation algorithms; and analyzing specific algorithms falling into these classes, NP-Hard and NP-Complete problems. Offered by Computer Science. May not be repeated for credit.

3 Textbook

Title	“Introduction to Algorithms (Fourth Edition)”
Authors	Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest
Publisher	MIT Press

Electronically available for free from GMU Library:

<https://ebookcentral-proquest-com.mutex.gmu.edu/lib/gmu/detail.action?docID=6925615>

4 Lectures

[as time permits]

- Foundations (chapters 1–5)
- Sorting and Order Statistics (chapters 6–9)
- Data Structures (chapters 10–13, 17, 19)
- Advanced Design and Analysis Techniques (chapters 14–16)
- Graph Algorithms (chapters 20–25)
- NP-Completeness (chapter 34)
- Approximation Algorithms (chapter 35)

5 Assessment and Grade Brakedown

Homeworks and Quizzes	30%
Midterm Exam	30%
Final Exam (cumulative)	40%

Your numeric score is computed as follows:

$$\text{NumericScore} = \text{ceiling}(0.3 * \text{PercentageOnHwsAndQuizzes} + 0.3 * \text{PercentageOnMidtermExam} + 0.4 * \text{PercentageOnFinalExam})$$

The numeric score is converted to a letter grade according to the following table:

A+	A	A-	B+	B	B-	C	F
[95, ∞)	[92, 95)	[90, 92)	[87, 90)	[84, 87)	[80, 84)	[70, 80)	[0, 70)

- All work is individual. You are not allowed to work with others on homeworks, quizzes, exams, or any other graded materials.
- You are not allowed to discuss homework with others before submission except with the instructor or the TA.
- You are not allowed to work with ChatGPT or other AI/ML-based software/programs for problems assigned as homework.
- Every homework should be returned by the due date. Late submissions will receive 0 points.
- Quizzes and exams will be in-person, and are closed book, closed notes. No access to electronic devices during quizzes or exams.
- The lowest graded homework will be dropped.
- The lowest graded quiz will be dropped.

6 Lateness and Make-Up Policy

- There will be no make-up for missed in-class quizzes or exams except under the following: If there is ever an emergency situation which prohibits you from attending class during quizzes or exams, you must alert the instructor and the appropriate student offices to make alternative arrangements. Doctor's notice or other proper documentation may be required to grant the exception.

7 Student Support Resources on Campus

Mason offers numerous student support resources, as detailed [here](#).

8 Academic Integrity

- All students must adhere to the **GMU Honor Code**. The University Honor Code is upheld and supported by the Office for Academic Integrity. Please see the Office for Academic Integrity for a full description of the code and the honor committee process. The principle of academic integrity is taken very seriously and violations are treated gravely.
- In addition to this honor code, the computer science department has further honor code policies regarding programming projects, as detailed [here](#).
- See also the **Statement on Academic Integrity** by the CS Department.
- Any deviation from the GMU or the CS Honor Code is considered an Honor Code violation.

9 Recording and/or Sharing Class Materials

- Sharing of instructor-created materials, particularly materials relevant to assignments or exams, to public online “study” sites is considered a violation of Mason’s Honor Code: these include but are not limited to accessing exam/quiz/homeworks/project/or any assignment questions or answers for this class; uploading of any of the instructor’s materials, quizzes, homeworks, projects, or exams; and uploading any of your own answers or finished work. For more information, see the Office of Academic Integrity’s **summary of information about online study sites**. They also have a **short video** on this subject.
- All course materials posted to Blackboard or other course site are private to this class; by federal law, any materials that identify specific students (via their name, voice, or image) must not be shared with anyone not enrolled in this class.
- Videorecordings – whether made by instructors or students – of class meetings that include audio, visual, or textual information from other students are private and must not be shared outside the class.
- Live video conference meetings (e.g. Collaborate or Zoom) that include audio, textual, or visual information from other students must be viewed privately and not shared with others in your household or recorded and shared outside the class.

10 Privacy

- Student privacy is governed by the Family Educational Rights and Privacy Act (FERPA) and is an essential aspect of any course.
- Students must use their Mason email account to receive important University information, including communications related to this class. I will not respond to messages sent from or send messages to a non-Mason email address.

11 Disability Accommodations

- Disability Services at George Mason University is committed to upholding the letter and spirit of the laws that ensure equal treatment of people with disabilities. Under the administration of University Life, Disability Services implements and coordinates reasonable accommodations and disability-related services that afford equal access to university programs and activities. Students can begin the registration process with Disability Services at any time during their enrollment at George Mason University. If you are seeking accommodations, please visit <http://ds.gmu.edu/> for detailed information about the Disability Services registration process. Disability Services is located in Student Union Building I (SUB I), Suite 2500. Email:ods@gmu.edu — Phone: (703) 993-2474
- **Covid-19 Note:** Students who have a Covid-related disability should contact the Disability Services office; DS will contact faculty using standard protocols about any students who require accommodations. Faculty are not expected to create accommodations for students outside of the Disability Services official guidelines.

12 Diversity and Inclusion

- George Mason University promotes a living and learning environment for outstanding growth and productivity among its students, faculty and staff. Through its curriculum, programs,

policies, procedures, services and resources, Mason strives to maintain a quality environment for work, study and personal growth.

- An emphasis upon diversity and inclusion throughout the campus community is essential to achieve these goals. Diversity is broadly defined to include such characteristics as, but not limited to, race, ethnicity, gender, religion, age, disability, and sexual orientation. Diversity also entails different viewpoints, philosophies, and perspectives. Attention to these aspects of diversity will help promote a culture of inclusion and belonging, and an environment where diverse opinions, backgrounds and practices have the opportunity to be voiced, heard and respected.
- For more information, please see
 - **Mason Diversity Statement** and
 - **Mason Non-Discriminatory Policy**

13 Sexual Harassment, Sexual Misconduct, and Interpersonal Violence

- George Mason University is committed to providing a learning, living and working environment that is free from discrimination and a campus that is free of sexual misconduct and other acts of interpersonal violence in order to promote community well-being and student success. We encourage students and employees who believe that they have been sexually harassed, sexually assaulted or subjected to sexual or interpersonal misconduct to seek assistance and support. University Policy 1202: Sexual Harassment and Misconduct speaks to the specifics of Mason’s process, the resources, and the options available to students and employees.
- **Notice of mandatory reporting of sexual or interpersonal misconduct:** As a faculty member, I am designated as a “Non-Confidential Employee,” and must report all disclosures of sexual assault, sexual harassment, interpersonal violence, stalking, sexual exploitation, complicity, and retaliation to Mason’s Title IX Coordinator per University Policy 1202. If you wish to speak with someone confidentially, please contact one of Mason’s confidential resources, such as Student Support and Advocacy Center (SSAC) at 703-993-3686 or Counseling and Psychological Services (CAPS) at 703-993-2380. You may also seek assistance or support measures from Mason’s Title IX Coordinator by calling 703-993-8730, or emailing titleix@gmu.edu.