

Advanced Algorithms, CS630-001, Spring 2020

Fei Li*

- LECTURE TIME

January 21-May 13: Tuesday: 7:20pm-10:00pm

- LOCATION

Innovation Hall 206

- COURSE WEBPAGE

GMU Blackboard CS630

- CREDIT

3

- REFERENCES

Algorithm Design, by Jon Kleinberg and Eva Tardos, 2006.

Recent papers

- PREREQUISITES

Grade of B or better in CS583

- OFFICE HOURS

10:00am-12:00pm Tuesday

- TA: TBD

- **email:** TBD
- **office:** TBD, Engineering Building
- **office hours:** TBD

- GRADING POLICY:

- **assignments** (60%)
- **a course project** (40%)
- [90, 100] : *A*; [80, 89] : *B*; [70, 79] : *C*; [60, 69] : *D*; [0, 59] : *F*

- SYLLABUS (to be updated over time)

- KT: Chapters 5.6, 7, 8, 9, 10, 11, 12, 13
- Papers

Number	Dates	Chapters	Reading assignments
1	January 21		Review
2	January 28	FFT	KT 5.6 papers (261:15-16) FFT slides I; FFT slides II
3	February 4	Flow	KT 7 papers (261:1-6) flow slides I; flow slides II; flow slides III
4	February 11	Flow (continue)	
5	February 18	NP-complete	KT 8 NP slides
	March 10	Spring recess	
6	February 25	PSPACE	KT 9 papers (364:1+) PSPACE slides
7	March 3	NP-special	KT 10 NP-special slides
8	March 17	Approximation	KT 11 papers (261:15-20) approximation algorithms slides
9	March 24	Approximation (continue)	
10	March 31	Local search	KT 12 papers (364:1+) local search slides
11	April 7	Randomization	KT 13 papers (261:18) randomized algorithms slides
12	April 14	Randomization (continue)	
13	April 21	student projects	
14	April 28	student projects	

- POLICIES

Please note that all coursework is to be done independently. Plagiarizing the homework will be penalized by maximum negative credit and cheating on the exam will earn you an *F* in the course. See the GMU Honor Code System and Policies at George Mason University Honor Code.

You are encouraged to discuss the material BEFORE you do the assignment. As a part of the interaction you can discuss a meaning of the question or possible ways of approaching the solution. The homework should be written strictly by yourself. In case your solution is based on the important idea of someone else please acknowledge that in your solution, to avoid any accusations.

- ACADEMIC HONESTY

The integrity of the University community is affected by the individual choices made by each

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of us. GMU has an Honor Code with clear guidelines regarding academic integrity. Three fundamental and rather simple principles to follow at all times are that: (1) all work submitted be your own; (2) when using the work or ideas of others, including fellow students, give full credit through accurate citations; and (3) if you are uncertain about the ground rules on a particular assignment, ask for clarification. No grade is important enough to justify academic misconduct.

Plagiarism means using the exact words, opinions, or factual information from another person without giving the person credit. Writers give credit through accepted documentation styles, such as parenthetical citation, footnotes, or endnotes. Paraphrased material must also be cited, using MLA or APA format. A simple listing of books or articles is not sufficient. Plagiarism is the equivalent of intellectual robbery and cannot be tolerated in the academic setting. If you have any doubts about what constitutes plagiarism, please see me.

- **DISABILITY STATEMENT**

If you have a learning or physical difference that may affect your academic work, you will need to furnish appropriate documentation to the Disability Resource Center. If you qualify for accommodation, the DRC staff will give you a form detailing appropriate accommodations for your instructor.

In addition to providing your professors with the appropriate form, please take the initiative to discuss accommodation with them at the beginning of the semester and as needed during the term. Because of the range of learning differences, faculty members need to learn from you the most effective ways to assist you. If you have contacted the Disability Resource Center and are waiting to hear from a counselor, please tell me.

References