

Course Syllabus

CSU Math 510: Linear Programming and Network Flows, Fall 2020

Instructor: Henry Adams

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Lectures: TR 9:30–10:45am online, on Zoom

Class Webpage: <http://www.math.colostate.edu/~adams/teaching/math510fall2020>

Textook:

Understanding and Using Linear Programming by Jiří Matoušek and Bernd Gärtner. This book is [freely available as a PDF to CSU students](#) if you login on the CSU library webpage.

Course Overview: Optimization methods, linear programming, simplex algorithm, duality, sensitivity analysis, minimal cost network flows, transportation problem.

Prerequisites: The official prerequisite is MATH 261 or MATH 315. The unofficial prerequisite is a certain level of mathematical experience, such as undergraduate-level linear algebra.

Requirements: During online teaching, I'd rather spend more time on teaching and learning, and less time on grading and evaluation. For this reason, the default is that your course grade is based 100% on homework.

However, since Math 510 is a Math PhD qualifying exam course, there is an optional final which doubles as the qualifying exam. You can skip taking the final if you don't want to take it, and if you do take the final then it can only improve your grade (otherwise your final score will be disregarded). To help prepare students for the qual, there is also an optional midterm, which you don't need to take if you don't want to, and if you do take the midterm then it can only improve your grade (otherwise your midterm score will be disregarded).

If you choose so, then the final can count for up to 25% of your grade, and the midterm can count for up to 25% of your grade, meaning the homework would then count for 50% of your grade. You could also take the final but not the midterm, or vice-versa.

Optional Exams: Important dates are:

- Optional Midterm, **Tuesday, October 13** online during class, and
- Optional Final Exam, **Monday, December 14**, online.

If possible, confirm you can attend these in-class exams before enrolling (unless you plan for your grade to be based 100% on homework). On exams you will only be able to use your brain and a pen or pencil — no notes, books, or electronic devices. The exams will be

comprehensive.

Homework: The clarity of your solutions will count as much as their correctness, and all steps must be explained. Working in groups on homework and to study is encouraged! However, your submitted homework must be written up individually, in your own words, and without consulting anyone else's written solutions.

Homework is due by 5pm on Gradescope (but if you email me to ask I will likely be accommodating of late homework). It is in your best interest to inform me as soon as reasonably possible when such a situation arises. [CSU policies apply](#) for university-sanctioned activities, for which you should give me plenty of advanced notice.

Academic Policies and Integrity: Students are expected to adhere to the CSU Academic Integrity Policy as found on the Students' Responsibilities page of the [CSU General Catalog](#) and in the [Student Conduct Code](#).

Colorado State University is committed to providing reasonable accommodations for all persons with disabilities. Students with disabilities who need accommodations should first contact the [Student Disability Center](#) in order to request accommodations for this class.