CS 4050 Algorithms and Algorithm Analysis **Spring 2019**

Instructor: Jerry Shultz

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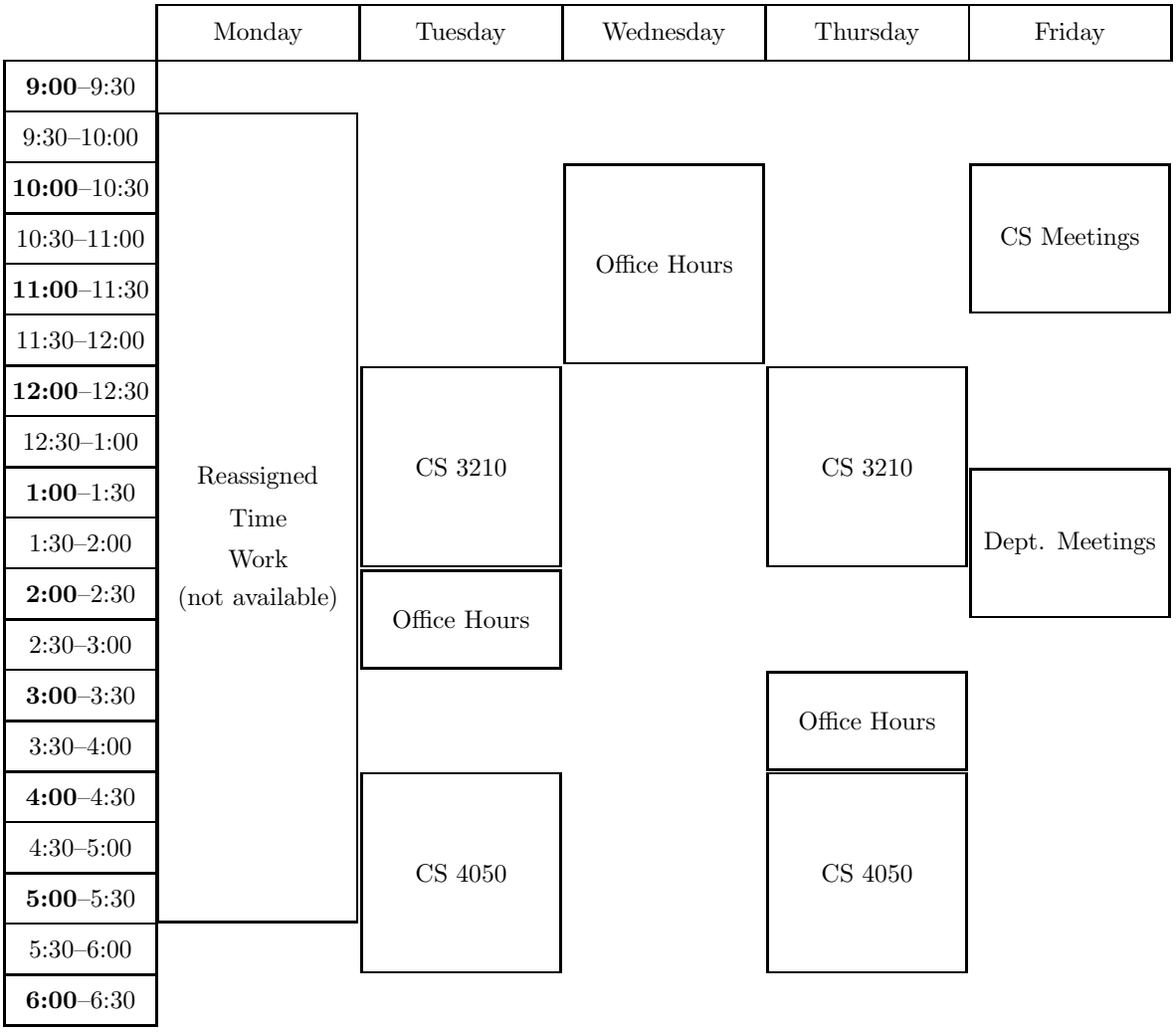

The times listed as "Office Hours" are times that I will be sitting in my office waiting to help you when you call or come by (barring emergencies and quick trips away and back, and travel time from and to classes).

You are welcome to stop by any time on the chance that I'll be there and will be able to meet with you. Finally, if those times are not convenient for you, we can arrange a mutually convenient time to meet.

Text:
Written materials provided by instructor and online resources (if you would like a book for further reading, I have found the texts by Neapolitan and Naimipour, just Neapolitan, or Levitin pretty readable and matching how our course will go to some extent, and you should be able to find used copies of older editions pretty cheaply)

Prerequisites
CS 3240, CS 3250, and 4 additional upper division computer science credits, all with grades of "C" or better, or permission of instructor. MTH 3210 is recommended.

Withdrawal dates for FULL-TERM courses are:

100% refund:	Monday, January 28
50% refund:	Thursday, February 7
Last Day for W:	Friday, April 5

Holiday information:
Spring Break: March 25–31 (no classes, campus open)

University Policies

Students are responsible for full knowledge of the provisions and regulations pertaining to all aspects of their attendance at MSU Denver, and should familiarize themselves with the following policies:

1. GENERAL UNIVERSITY POLICIES
2. GRADES AND NOTATIONS including WITHDRAWAL FROM A COURSE, ADMINISTRATIVE WITHDRAWAL, and INCOMPLETE POLICY
   Students should be aware that any kind of withdrawal can have a negative impact on some types of financial aid, including scholarships.
3. ACADEMIC INTEGRITY
4. POLICY STATEMENTS ON SEXUAL MISCONDUCT
5. ACCOMMODATIONS TO ASSIST INDIVIDUALS WITH DISABILITIES
6. CLASS ATTENDANCE
7. ELECTRONIC COMMUNICATION (STUDENT EMAIL) POLICY

For a complete description of these policies go to `msudenver.edu/math/policies` or `msudenver.edu/las/studentinformation/forms`.

Also, the College of Letters, Arts, and Sciences is committed to, and cares about, all students. To help you manage personal challenges and basic needs security, the university offer several resources. Any student who has difficulty affording groceries or accessing sufficient food to eat every day, or who lacks a safe and stable place to live, and believes this may affect their performance in the course, is urged to contact the Dean of Students (303-615-0220 or 303-615-0423), the Gender Institute for Teaching and Advocacy (303-615-2052), or the CLAS office (303-615-0995 or 303-615-1301) for support.

Additional Policies for this Course

If you must miss a class session, it is your responsibility to find out what you missed and make up work if possible. If you miss a test due to an appropriate cause (illness, unavoidable family or work conflicts, religious holiday, etc.), you are responsible for arranging with me a time to take a make-up exam.

Course Organization and Rules

These are the typical activities for class time:

- mini-lectures: I will on occasion present brief introductions to new material
- questions and answers, discussions: as needed, we will discuss issues that have come up
- discussions: some projects will ask you to be ready to discuss your group's answers to certain questions (we will have these when we are ready to move on)
- project time: working in groups of size five or six (smaller if people are missing), students will work on projects, with me available for help
- routine project check-off: when a group has completed a routine project, I will briefly discuss it with the group and, if satisfied, will check it off as completed for every group member who fully participated
- tests: for each five weeks of material, roughly, we will have an in-class test

These are the activities you will do outside of class:

- read any materials I provide, as needed
- access online resources, as needed
- complete routine projects that were not completed during class
- work on optional projects individually or in groups of at most three people

Projects come in two types—routine and optional, which reflect the pedagogic design of the course and the grading rules. Routine projects reflect what I think every student who ends up getting credit for the course should be able to do/understand. Optional projects will involve either just further work on the same material, or work on somewhat more advanced or different material.

I will try to design the projects so that most groups can comfortably complete the routine projects during class time. This will mean in practice that some groups, for whatever reasons, have to work together or individually outside of class time to catch up and complete some of the routine projects. And, other groups will complete the routine projects ahead of schedule, and have time to start working on optional projects during class time. Note that in this case a group of five or six students will need to separate into two groups of

two or three (or work in a larger group to get started, realizing that you will need to break apart to complete the work and submit it for credit).

I will set the schedule for class time. This means that when I think we have had enough time for some routine projects to reasonably be completed, we will move on to the next topic and projects.

Routine projects should ideally be checked-off in class, while optional projects will typically be emailed to me or handed to me for written deliverables. If you are the group member who emails me the completed project, please be sure to CC (a very ancient concept) the other group members so when I give feedback they will also receive it.

To earn at least a C for the course, you must complete *all* of the routine projects and achieve an average test score of at least 70% or so.

To earn a higher grade for the course, you must do what is required for a C and in addition score better on the tests and do some of the optional projects. If you score an average of 90% or higher on the tests and complete all the optional projects you will be assured of receiving an A for the course. All other accomplishment profiles between these endpoints of what guarantees at least a C and what guarantees an A will be assigned grades between A and and C according to my objective, fair, impartial, and wise judgment.

The non-specificity of these rules is intentional. I want the freedom to assign appropriate grades without being locked into an arbitrary and probably inappropriate numeric scheme.

I will create tests that have about 70% of the points categorized as "routine," and about 30% more challenging in some way. When I'm thinking of test questions, for at least 70% of the points, I'll design questions for which I think, "anyone who has completed the corresponding routine project on this material should certainly be able to answer this question perfectly," and for at most 30% of the points, I'll allow questions that are a little more challenging in some way. My intent is that if a person has fully participated in group work on the relevant routine projects, then they will be able to get at least 70% of the points on the test. Note that if a person is not participating fully, at least to the extent of understanding what the group is doing, then they of course may not be able to complete the corresponding test questions, and will probably receive less than a C for the course.

You are allowed to work in smaller groups on the routine projects in class, if you insist, but note that there are a lot of obvious benefits to working in a group.

If you miss some class sessions, you will need to complete some routine projects on your own—in consultation with your group members, of course, if logistically feasible.

Checking-off of projects will be done on a "pass-fail" basis—I will either say, okay, it's done, or I'll ask that you fix or complete your work.

I will post all course materials, including the written "course notes" corresponding to the project specifications, materials for the mini-lectures, and any summaries of whole group discussions of projects. at
`rowdysites.msudenver.edu/~shultzj`
under the link for this course.

We will have three in-class Tests, each covering roughly the previous five weeks of material. You will be allowed to use any written materials during the Tests, but you will not be allowed to use any electronic devices.

Here is the schedule for the tests:

Test Number	Date	Class Periods Covered
Test 1	February 28 (class period 12)	1–9
Test 2	April 9 (class period 21)	10, 11, 13–18
Test 3	May 14 or 16 (scheduled final exam time)	19, 20, 22–28