

## Guidance for SD Mines Faculty for Final Exams

Exams have always been a challenge in online education and pose an even greater problem when you have structured your class for face-to-face meetings and suddenly find yourself teaching online. Preventing cheating is more difficult online. In emergency online instruction, not all students have equal access to Internet, and fairness is also an issue. Please adhere to these guidelines in planning your final exams.

1. Administer the exam the same day as scheduled, but not in a narrow time window. Perhaps open the exam for 24 hours and the student has within that time frame to complete. This is how many exams are currently being administered (maybe not as long as a 24 hour window) and from what I have heard from math and chemistry, it seems to be working fine.
2. Consider employing a take-home exam that is due the same day the exam was originally scheduled. Exams can be started up to a week before the due date. The time period of the exam can be as little as one day or five days.
3. If appropriate, consider alternatives to a final exam such as a project, a final report, an e-portfolio, a professional presentation, a mock lecture, a case study, etc.

This list provides some additional suggestions for you to consider.

### Approach 1. Use exams but minimize cheating

- Live proctoring (formal) involves arranging for a trusted professional to oversee the exam at a licensed testing center. This normally involves a charge to the student. This option is likely not available during the COVID-19 climate and many testing centers are closed.
- Informal proctoring involves arranging for an acquaintance of the student to give the exam and mail or email it to the instructor. Normally this might be a teacher, supervisor, or other trusted professional. Again, in COVID-19 conditions this option is probably restricted to an acquaintance living with the student and may not be any more effective than trusting the student to take the exam honorably.
- Respondus lockdown browser is a method to lock down a student computer while he or she takes the exam to prevent using Internet resources during a test. Respondus Monitor can add video monitoring of the student during the exam and flag suspicious behaviors such as leaving the room, consulting a textbook, or conversing with another during the test. Training on Respondus is being offered by Mines and by Respondus. However, the video option may not be realistic for students with limited Internet. Consider providing a practice exam that uses the same method but doesn't count, so that students can get familiar with the process and assess how well it will work for them BEFORE the big day.
- Design your exam such that using the book and other resources is allowed and expected. Such exams focus on skills rather than memory. Resources are available, such as seeding quantitative questions with different numbers so that the same problem is given to different students but with different values. This method can be combined with others. Many textbooks now have banks of questions so that each student can do a different exam.
- Use D2L to create an exam with multiple choice, short answer, or essay questions. If you are willing to create additional questions, the test can pull randomly from them so that each

student gets a slightly different test. When tests are timed, students who have not studied, and thus need to look up everything, will be at a disadvantage.

- Tests may be timed. However, don't structure these so that all students must take the exam in the same time period. Internet problems, or home distractions, may make this unequal. However, you can create a time restriction on a test that starts when the student starts the test, so he or she can choose when and where to begin. For example, create a test and give it a 90-minute time limit, but allow the student to complete the test any time within a 24- or 48-hour time period. You may also want to allow a little extra time so that students can navigate the unfamiliar need to download, complete, and upload exams.
- Use fewer problems on the exam, but ask students to explain their answers as if they were writing a textbook, either in written form or as a video. This strategy makes it harder for a student to simply copy a solution from someone else, and makes it more obvious if they did.
- Include a statement from the student Code of Conduct and ask the student to sign (or check a box) to verify that the submitted exam is the student's own work. This step won't deter a determined cheater (most of the above won't either), but it may make a student think twice about it.

## Approach 2. Use alternatives to exams

Many online courses, because of the challenges of testing, avoid traditional exams and focus on activities that promote learning. These activities are designed to foster a deeper and more authentic engagement of the student with the course ideas, and good assignments allow students to practice professional skills instead of doing rote memorization. Exams rarely reflect the workplace experience, i.e., few graduates must produce timed responses to previously unknown questions with no resources to consult.

These methods could be appropriate as an emergency fix mid-way through the course:

- Assign a final project, essay, professional presentation, or report instead of a final exam. This strategy can be especially effective when the student must develop an idea, present a proposal, do the project, and write up the results. You get to see each step.
- Ask students to create a crib sheet, as if preparing for an exam, and turn that in instead.
- Ask students to create an e-portfolio of their work in the course and self-reflect on what they have learned.
- Ask students to create an exam that covers the critical objectives of the course and create an explanatory answer key.
- Give students a final exam with answers (some of which are incorrect) and ask them to grade it and provide helpful comments about the incorrect or partially correct answers. Many of you probably have files full of incorrect answers to draw from, so long as you remove identifiers.

These methods are less helpful if you are already through most of the course, but if you already use such techniques as part of your teaching, you may find that a traditional final is not as important:

- Use more frequent open-book assignments in place of formal exams. If grading gets to be too much, choose one or two problems to grade in detail and do only a quick check on the others.
- Assign practice problem sets and encourage students to use discussion boards to discuss approaches and answers. Give credit to students who successfully help others or who are the first to post correct solutions with explanations.
- Use more frequent low-stakes assessments, but structure them as you will the final exam, so that students get practice
- Use multiple forms of assessment (quizzes, problem sets, self-reflection, papers, portfolios) to lessen temptation to cheat on one big exam.
- Replace midterms with practice exams, in which the student solves problems and then can compare to published answers. The final exam is then the only one for which you need to set up complex monitoring strategies.
- Use D2L to give small weekly multiple-choice or short answer quizzes as a learning activity rather than an evaluative (graded) one. The point is to encourage students to consult the course materials to answer the questions or increase their comprehension, rather than as a test to see if they memorized certain things.

Additional reading

<https://www.facultyfocus.com/articles/educational-assessment/alternative-assessment-methods-online-classroom/>

<https://cei.umn.edu/support-services/tutorials/integrated-aligned-course-design-course-design-resources/alternative>

<https://teachingcommons.lakeheadu.ca/13-alternatives-traditional-testing>

<https://keep-teaching.ucdavis.edu/test/testing-alternatives>

<https://sites.tufts.edu/teaching/2020/03/18/alternative-to-exams-for-remote-teaching/>