

# Temptations in the Large Lecture Class

## Concrete Measures to Help Students Practice Academic Integrity<sup>1</sup>

*Sarah L. Bolton*

IN ORDER TO DEVELOP an academic integrity policy for a large class, it is necessary to know the type of student that will be taking the course. The students in General Chemistry, the course with which I have experience teaching a large lecture class, are characteristically very grade-driven because most will be applying to obtain a higher level of education after college. In other words, a good number of students feel it necessary to get an A in the class due to the standards set by medical, dental, veterinary, and graduate schools. General Chemistry often gets a reputation for “weeding out” students; a poor grade in this course could critically affect a student’s future. This cutthroat mentality may make a student desperate to get the best grade possible, at any cost. “At any cost” usually involves some all-nighters and the lack of a social life; however, some students will be tempted to resort to academic dishonesty as a means to succeed.

General Chemistry classes at Syracuse University typically enroll 160-220 students with a wide variety of scientific backgrounds. It is a mandatory course for science and engineering majors. The diverse scientific experience of the students often makes it difficult for a professor to gauge how thoroughly to teach and test—being too general can bore the more advanced students, while too much specificity could discourage the weaker ones. Most students taking introductory level science courses have taken high school chemistry within the past year, but some find that they need to work much harder in college than they did in high school to be in the top of the class. One of the most common complaints after the first exam is from students who were in the top of the class in high school but are now getting average or even below average grades. Such a grade is disappointing to the student, but also carries with it the burden that it must be explained to parents and mentors with high expectations. A student

under such pressure may go to great and troubling lengths to get a higher grade in his or her required general science classes.

Cheating on an exam is typically preceded by panic. This panic results from the fear of failure, which can lead even the most habitually honest students to resort to unethical behavior. Unfortunately, in a large classroom setting such as in General Chemistry, this fear is often accompanied by circumstances that are optimal for cheating—tests taken in a large, cramped room with too few proctors and plenty of distractions. It is at that point when a casual or even a forceful reminder is valuable to help the student make the best decision with regard to maintaining academic integrity.

The strategies described below are not intended to scare students, but should reinforce the importance of upholding the academic integrity policy. I have not personally performed any scientific studies or surveys to support the strategies below; all are based on my personal experience and are simply suggestions that have prevented the professors and proctors that I have worked with from having to deal with a situation involving a breach of the academic integrity policy. (The chart found at the end of the chapter gives a summarized outline of each suggestion, as well as indications of when during the semester to implement each strategy.)

The backbone of any academic integrity policy in a particular class is the syllabus. A well-written syllabus should prevent any confusion about that class's policy. Often, professors or teaching assistants assume (or hope) that the

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students will carefully read the entire syllabus. This is not usually the case. For this reason, although it may take extra time, the academic integrity policy should be reviewed by the professor on the first day of class. Having the students sign a sheet stating the policy and the student's agreement to honor it is an excellent way to bring attention to the subject. (Students who add the class after the policy has been explained should sign the agreement prior to the first graded assignment or exam.) Most people will not provide their signature unless they read a document carefully.

At this point, the student will hopefully see the importance of this policy and respect the efforts made to uphold it throughout the semester. This also gives proof that the student knew the policy prior to any testing situation, if a case of dishonesty should arise.

In a large class, it is difficult if not impossible for the professor or teaching assistants to be acquainted with every student by name and face. Teaching assistants often get to know the students better as a result of having them in small recitation or lab sections (approximately 30 students per section); however, the TAs are generally not present during lectures. Taking attendance by calling out each name can often be time-consuming and is unreliable. Passing around an attendance sheet is a simple way for students to prove they attend class on a regular basis. This presents a situation that some students do not recognize as a matter of academic dishonesty. Forging a signature for a classmate is a temptation that can easily be deterred. It should be clearly written and stated that the signature on the attendance sheet will be compared to the one given on the first day of class. If there is a punishment for missing class, students are more likely to forge another's signature, with the mindset that they are "saving" a friend. If, instead, having excellent attendance carries a reward, the student will be less inclined to break the rules.

As the semester rolls on, students often forget which reading assignments to finish for a particular lecture and when homework is due; this also means that the academic integrity section of the syllabus is becoming hazy. Requiring a signature on every examination paper and attendance sheet should compel the students to remember the promise they made on the first day of class. This again provides confirmation of the understanding of the academic integrity policy.

In large classroom settings it is sometimes hard to provide a suitable testing environment. Spreading students out—a seat and a row apart, for example—drastically decreases the urge to cheat, simply by making the act more difficult. Copying from a neighbor becomes physically more challenging if that neighbor is one or more seats away. In steep lecture halls, seating students directly behind each other forces a cheater to make additional lateral movements to be successful. Increased movement or agitation is generally a telltale sign of unethical behavior. Available space in the lecture hall is generally the restricting factor limiting the dispersal of students; this may mean using two or more testing rooms. Generally, the rooms need to be scheduled months in advance, so planning ahead is essential. This allows for flexibility in seating arrangements. If multiple rooms are used, a method of communication needs to be available between testing rooms, by either telephone or a messenger—if there is a mistake found on the examination forms or an announcement needs to be made, every testing room needs to be informed.

General Chemistry professors will occasionally make up different versions of an exam; this will make it extremely hard for a student to copy off a neighbor because their questions are different or at least in a different order. The use of this strategy may well seem like extra work to some professors, and therefore is not consistently exercised; however, it is one of the most reliable ways to prevent

cheating on multiple-choice exams. (Even the threat of different versions will discourage cheating, and will not make for any additional grading.)

The advancement of technology also gives rise to new technological approaches to cheating. Electronic calculators, which used to be mathematical tools, have now become miniature storage devices. Memorization has essentially become obsolete. This is fine, unless the subject being tested requires the students to memorize specific equations, facts, or figures. In other words, a calculator can store everything a student needs to pass an exam; however, in the long run it would benefit the student more if he or she actually learned the material rather than simply copying it from a calculator. A simple scientific calculator, which can perform logarithm functions, is necessary for General Chemistry. However, most students require a more advanced calculator for their upper level math and science courses, and these can be misused to store prohibited information. Calculator checks during an exam have become important; two methods that show good results are randomly checking about 15% of the calculators, and simply deleting all RAM memory of every calculator that comes through the door. (The commands for deleting the RAM are different for each model of calculator, but most have a “Mem” function button; once this is activated, simply follow the commands that will lead to the RAM deletion. If this fails, typically removing the batteries for a few minutes should work.) These precautions may seem time-consuming, but preventing cheating is the best way to avoid a difficult situation. Storing unauthorized data in a calculator constitutes cheating, and the penalty should reflect that. Other personal belongings that can store data should not be allowed into the testing area. Devices such as a walkman, MP3 player, or cell phone are not essential and should be prohibited or at least required to be turned off and collected in a separate part of the testing room. An announcement should be made reminding students to turn off any electronics; this will prevent a disruption later during the exam.

Cheating is not restricted to the electronic variety; old-fashioned dishonesty is still a tempting option. To reduce this form of cheating, all books and loose papers need to be removed from the testing area. A little creativity can turn otherwise harmless items into possible cheating tools. Possessions such as food containers, beverages, and even caps can be turned into portable data storage. Calculator cases should also be checked, as they can be a compartment for cheat sheets. Personal belongings, such as purses, bags, and coats, need to be placed out of reach, to avoid being a distraction. Any student requests to bring nonessential items to the exam (such as tissues, cough drops, or a clock) need to be approved prior to the exam, and the professor should make the decision concerning what to allow.

Providing students with plenty of supplemental material, such as tables, charts, or numerical constants not requiring memorization, during a test will reduce the temptation for students to smuggle in their own. In General Chemistry, each student is given a new periodic table for every exam; this prevents people from bringing in their personal copy that may have notes or hints written on it (and keeps students from being tempted to write lists of atomic numbers on their arms!). Rules about what is allowed during an exam need to be clearly explained to students and proctors prior to the exam date. Making it extremely clear what specific details or facts need to be memorized and what, if any, additional material is acceptable will reduce the anxiety associated with cramming for an exam.

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For instance, before the final exam I inform students that the speed of light needs to be memorized, but the ideal gas constant, along with its units, is given. This specification also functions as a hint of what should be focused on while studying—i.e., if the speed of light needs to be memorized, it will most likely need to be used to solve a problem.

A simple proctoring technique that can be applied to prevent academic dishonesty is “active proctoring.” Active proctoring involves virtually constant movement by the proctors. Proctors should shift positions and spread out throughout the testing space. Using this technique, a small number of proctors can cover much more space and notice suspicious behavior without difficulty. Active proctoring promotes academic honesty and concurrently allows proctors to be available to answer questions in far corners of the room. This encourages more reserved students, who would be unlikely to draw attention to themselves across a large room, to ask questions that would clarify otherwise confusing language or instructions. Ideally, the student-to-proctor ratio should be at most 25:1. Proctors need to be recruited early in the semester and given a schedule of the dates and times they will be needed.

If a proctor suspects that dishonest behavior may be occurring, a simple announcement such as, “We have reason to believe someone may be cheating; please keep your eyes on your own paper,” is often an effective deterrent. Even if there is no suspicious activity, this statement, or a variation, is useful to discourage a potential cheater who is thinking about being dishonest but has not yet crossed that line.

A final reminder of the importance of honesty is the requirement that each student must show photo identification before handing in the exam. A rare but serious form of cheating involves a student “stand in,” in which a more qualified person takes the exam. Announcing prior to the test that students’ IDs will be examined when the student turns in the exam provides a substantial deterrent for this severe form of academic dishonesty. Also, requiring that each person write his or her student ID number on the examination paper will help further verify his or her identity. To some students, this strategy may seem slightly invasive; it is a good idea to remind them that this precaution is simply another method to provide the most honest testing environment possible. Proctors should take the ID process seriously and check the name and picture of the student; this is not meant to intimidate students but to reassure them that academic integrity is a vital priority of the course.

These strategies will encourage academic honesty by creating a situation in which cheating is very difficult and the fear of failure cannot prevail over the student’s integrity. At the outset, some of these strategies may seem time-consuming or strict; however, they require only modest additional efforts by educators and students. These suggestions are based on experiences in a General Chemistry class, but can be applied to any large class setting in which academic integrity is essential. By taking these preemptive measures, educators can prevent students from undergoing the humiliating process of punishment for academic dishonesty; but more importantly, we can also encourage honest academic practices.

#### Notes

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## Appendix

The table below gives summarizes the Academic Integrity (AI) strategies proposed in this chapter.

<i>Strategy</i>	<i>When to implement the strategy</i>	<i>Short description</i>
Reserve extra testing space	Up to a year before the class—this most likely will involve the registrar	Reserve an extra room to allow students to sit at least a seat apart
Include AI section in the syllabus	At least one week before class starts	Include the academic integrity policy in the syllabus
Make an AI agreement sheet	At least one week before class starts	The sheet should include a line for the students' signatures
Discuss the policy	The first day of class	Emphasize the importance of the policy and collect signatures
Make attendance a reward	Sporadically throughout the semester, as an agreement reminder	Use a sign-in sheet to save time—use positive reinforcement
Determine the number of proctors needed	1-2 weeks before an exam—at most 25 students for each proctor	Be sure to alert each proctor of the date and time he or she is needed
Announce what will be tested	1-2 class periods before an exam	Be specific about what is allowed (calculator, reference sheets, etc.)
Announce if extra material will be provided	1-2 class periods before an exam (and again during the exam)	State what tables, charts, constants, etc., will be provided
Make different versions of exams	At least 1 week before an exam	This makes it hard for students to copy multiple-choice answers
Meet with proctors	30-40 minutes before an exam	To explain what is expected (active proctoring, how to check ID, etc.)
Check/clear calculators	Immediately before the exam	Do random calculator checks or clear all RAM
Seat students apart	At the beginning of an exam	Every other seat and row (this depends on room/class size)
Provide an academic testing environment	From the beginning of the exam and throughout the exam	Remove all papers, books, etc.; turn off all unnecessary electronics
Active proctoring	Throughout an exam	Proctors should move around, be alert, and answer questions

<i>Strategy</i>	<i>When to implement the strategy</i>	<i>Short description</i>
Communication between rooms	Throughout an exam	Have a messenger or phone access to communicate with other rooms
Announce reminders of “No Cheating”	During an exam	To further discourage cheating
ID students	After an exam	Ask to see ID as the students hand in the exams