

## How to Minimize Cheating in Your Online Lab Science Courses

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It is a common misconception that cheating is rampant in online education. Intuitively, this position seems correct since online students primarily work independently without direct instructor supervision. However, studies verify that the incidence of cheating in online classes is no greater than in on-campus classes. While some level of academic dishonesty will always exist, there are ways it can be minimized both in the classroom and online

- **Set high standards in the beginning:** The vast majority of students want to learn and be challenged. Their favorite teachers are usually the ones who expect the highest standards of work and motivate them to excel. Meeting the high expectations of these teachers produces high levels of self-confidence and personal pride as well as deep knowledge. Students motivated to strive for excellence are not usually inclined to cheat.
- **Define academic integrity and specifically identify what constitutes cheating and/or plagiarisms:** In the age of Wikipedia and group projects, it is important students understand where group and individual efforts part ways and be informed about your expectations of academic integrity. Specify exactly which assignments are group projects and which are to be completed independently. Warn students of common plagiarism errors and give them appropriate citation guidelines. Telling them about the anti-plagiarism software in use today may be a deterrent to those tempted to cheat.
- **Keep them on Schedule:** Once students fall behind in an online course, it is very difficult for them to catch up; they are then much more likely to cheat and/or to drop the course. Thus, one of the most valuable tools for both instructors and online students is a course calendar specifying assignment due dates. The syllabus should strongly emphasize that all assignments are due on time without exception, and the instructor should rigorously enforce these due dates. Fair but strict deadlines will help students develop self-discipline and the organizational skills required to succeed in their online studies and life.
- **Give Unique Assignments Each Semester:**
- **Randomize objective quiz and exam questions:** All course management systems allow the same quiz and exam questions to be given to each student in a different

[www.LabPaq.com](http://www.LabPaq.com) | 866.206.0773 | [yoursciencepartner@labpaq.com](mailto:yoursciencepartner@labpaq.com)

Hands-On Labs, the producer of LabPaqs, is an educator-owned company and pioneer in online science education.

LabPaqs cover more than 350 campus-equivalent experiments spanning most science disciplines:

Allied Health | Anatomy & Physiology | Biology | Botany | Chemistry | Environmental & Forensic Science | Geology | Microbiology | Physics

random order. Thus, John and Joe will be tested on the same questions, but #1 on Joe's test will be different than #1 on John's, and they will not easily recognize they have the same test questions.

- **Give frequent, reinforcing quizzes:** Just as practice makes the pianist perfect, repetition and reinforcement make the scholar smart. Short weekly quizzes that address major course objectives force students to frequently interface with the materials they need to learn. These quizzes should not be timed. Rather students should be encouraged to take time to research questions about which they are uncertain, for such research activities will more firmly implant the information in their mind. Building student's confidence in their knowledge minimizes a propensity toward cheating.
- **Time assessment exams:** Set reasonably tight time cut-offs for each exam. This forces the student to use their own knowledge to answer each question, for there is no spare time to look up answers in a textbook or call a friend. Make students aware at the beginning of the semester that this will be done, for this knowledge will motivate them to better focus on their studies.
- **Require discussion board participation:** A significant portion of the student's grade should be allocated to discussion board participation. It is important to specifically quantify the minimum number of postings required, i.e. one well-researched and written response to each discussion board question and two carefully-considered responses to other students posting. Ideally, the students should also be given examples of good and poor postings and know that something like "I agree with Joe" is not an acceptable posting.
- **Begin the semester with brief email exchanges with each student.** Instruct students to introduce themselves to you and their peers by answering a specific set of questions spanning personal information to academic aspirations. Directly respond to each student with follow-up questions to personally engage him/her. This relationship building activity will provide personal knowledge about students and their writing styles, plus better involve and motivate them in their coursework which in itself discourages cheating. However, if you suspect cheating, you have a personal textual framework to help with your evaluation.
- **Students should NOT share LabPaqs:** One of the advantages of Labpaqs is that each student actually gets to perform every step of the lab and learn first-hand from each experiment. The time and material constraints of campus labs often allow only a few to handle the lab materials while the others passively look-on. Due to the nature of experimentation, two students working independently will rarely obtain



exactly the same results. The normally occurring small differences in data accumulation can be viewed as integrity indicators when assessing lab reports.

When students share a LabPaq and work together, their data and lab reports tend to be almost identical. This makes it difficult to assess if independent learning actually took place or if one student did the work and the other simply copied the results. Yes, it is possible for two ethical students to work together and share a LabPaq for the sake of economy. Yet, in view of the total time and cost invested in higher education and the value of a solid science knowledge, the cost of a potentially diminished learning experience should also be an economic consideration. Under no circumstances should an instructor allow more than two students to share one LabPaq; experience shows all the students will then have an inferior laboratory experience.

- **Require a few photos be included in each lab report.** All students today have access to a digital camera or a cell phone containing same, so they can easily insert photographs into their assignments. Lab photos should include images of the student's lab facilities, experiment set up or results, plus the student at work in their lab. Photos provide evidence the students conducted the lab themselves and make cheating much less likely. Also, the ability to see the experimental setting and set-up can often be helpful to the instructor in addressing students' questions and problems