

# Student Comments on LCCTA

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The purpose of this presentation is to acknowledge students' comments on the LCCTA approach to teaching introductory astronomy.

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This presentation was created in conjunction with the LCTTA textbook project.

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## Abstract

Students' criticisms of the LCTTA project are presented.

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I include an abstract.

What you're doing looks fantastic, but...

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There's always a "but" and sometimes it has two tees.

...students will get frustrated or disgruntled and leave the course. We have to keep enrollments up.

7

To my knowledge, this has only happened once in my courses. It is true that few students see the value of critical thinking at first. Once students see why critical thinking is important and how it applies to astronomy they are generally very appreciative. I question the integrity of any institutions that put enrollment at a higher priority than instructional quality. Yes, I know they do it but it's still wrong.

...this stuff isn't appropriate for my community college students.

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Nonsense.

...you're discussing politics and religion and these topics are not appropriate for science courses.

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On the surface, this point is correct. However, I have two reasons for including these topics as they relate to science. One is that science is under attack by both of these influences and students must be made aware of this. The other is that students have likely been exposed to these influences more so than to science in their previous experiences. Note that I do not seek to change students' belief systems, even though some students and other people have accused me and my colleagues of trying to do. I simply want students to be aware of the the differences between belief systems and science.

"... I do not think that you should imply that we have not learned anything in a science course until we have taken your class. I feel like that was an insult to me and past instructors that I have had. I may have taken this more personally than what you meant for it to be, but I work very hard in all of my classes. I do not take these kind of comments lightly. All of the science instructors that I have had at [school] were excellent, and I learned a lot from them."

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I include this student comment because it addresses one of my fundamental assertions, namely that science is lacking in traditional science courses. As evidence, I offer the fact that when I question students about what they perceive to have learned, they rarely do anything other than quote readily looked up facts and cannot articulate explanations for physical phenomena.

"... I and other classmates have felt uncomfortable with the arguing. I feel that a distraction that is hard to overcome, I do know this is not totally in your control however. I also know that we have been babied in our previous education but one teacher in one semester can not change our learning habits and I wish you would try to adjust us to your teaching styles and see that we all learn different ways."

11

Note the concern over “arguing” and the remark about having been “babied” previously.

"... I was looking forward to Astronomy before the semester started, however after the first couple of days, I was wishing that I had not taken it. But now I am starting to enjoy it. I like the activities and they do a really good job at letting me see for myself how something happens, instead of reading it out of a book. I hope the course gets better, even though it is already interesting. I have another science course I have to take after this one and I hope to take Astronomy again in the future."

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Note the comment about activities versus merely reading the textbook.

"... With the hands on activities, I have found that I have learned quite a bit more than I knew or even thought of before. I think this way of doing things is a good idea."

Note the remark about activities.

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"... I thought some of the activities were annoying but they helped with homework assignments."

Note the strange remark about activities.

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"... At first, I found your teaching techniques unorthodox, but as the course progresses I am learning to appreciate them."

Students frequently voice concerns over the way this course is taught.

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I completely agree with the statement about critical thinking being rough.

"... I will say that the first week (critical thinking) can be rough on new students expecting to talk about stars on the first day."

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This is what I'm hoping for!

"... Though, it isn't the first time I've been presented with information like this we've discussed, it has still been interesting and probably the most educational course I've taken at CVCC (AND will probably be the only one worth taking)."

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Note the remark about not understanding students' answers. Learning to communicate effectively is a huge part of critical thinking and therefore also a huge part of science.

"... Your approach and careful delivery of the early material, specifically the "critical thinking," was unique and for me, very helpful in processing the material that was is to come. ... And just when I think I've done it, you send me a reply stating you "don't understand" my answer, or where I'm coming from. It's at those moments I have said to myself, "Now he knows how I feel." "

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"... because I love the way you teach the course and the things you're opening our eyes to. Even though I don't like the way you do tests and the way you word things sometimes, you make the test questions really advanced in my opinion, but that makes us think and push ourselves..."

My tests are radical in that they are never multiple choice. Instead, they require students to articulate correctly reasoned and logically consistent answers, which is challenging if not difficult for them. They have never had to do it in a science course before.

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"... My attitude has changed and I am learning some very cool stuff. The class has forced me to think, I have never had to do that before."

This student turned out to be my most memorable because of her complete change in how she valued education.

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"... The instructor and class materials have challenged me intellectually. The course is both tough and stimulating. I have learned many things including the value of true critical thinking as well as several tangible methods of understanding and describing astronomical phenomena."

Note the remark about the value of critical thinking and applicability of course content.

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"I was expecting watching Hubble footage and having another mundane 'by the book' course. This is refreshing. The critical thinking skills have come in handy almost every day and will be something that will serve me the rest of my life."

22

Despite the humor, this student was sincere.

"... The projects along with the group members guided me along enhancing my conception of the sun, stars, planets, the earth and sky, the vast universe and associated properties. This course created a greater awareness to aspects of the natural world I had previously overlooked. Overall this course has increased my understanding of physical relations of our world and beyond."

23

Writing quality is something I address in my course and will continue to do so. Despite the quality, this student's remarks are sincere.

"... I like the different approach to learning, it really helps in this type of class."

24

Students usually come around by the semester's end.

"Unfortunately, astronomy does not interest me nearly as much as I expected it to. It doesn't seem to come too naturally for me either. I don't think I am very good at seeing things from the perspective that astronomy forces one to. I do, however, enjoy the class. I like the way we move around almost every day and are given the opportunity to figure things out for ourselves. I believe this forces us to think, which ultimately makes us smarter. The main problem I have with the course is how objective it is. It seems as though knowing the answer is not enough--that I must know it in the form and fashion you wish. Maybe if I were a teacher, I would understand this better, but I don't like having to either interpret things the way you do or settle for a bad grade."

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Note the remark about figuring things out. Note also the remark about "knowing the answer" not being sufficient.

"I think this course is very well presented. I like that we are taught to think and are expected to be able to explain what we know."

26

This is short, sweet, and to the point.

"Perhaps in the future you can create some sort of pre-defined category system with rating or something and remove the burden of thinking from your weary students. This class is definitely one of the more intellectually demanding courses I have taken by far. The passion with which it is taught and the depth of the material are surprising to see in community college."

27

I have no idea what the first sentence means. Note the remark about community colleges. This could, however, be a reflection of this student's lower expectations rather than the higher than average demands of this approach to introductory astronomy.

" . . . I have answered questions and received responses stating the answer is true and have the quiz marked wrong. How can an answer be true and also be wrong? . . . There seems to be no reward for trying. It seems like either your an expert or a failure."

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Note the remark about answers being true but wrong. This is a frequent problem that has to be repeatedly addressed. The remark about no reward for trying is interesting.

"I have learned a lot in this class, not just about astronomy but stuff I can use in other areas of my life. This is the best I have ever done in any science class I have ever taken. Some things are hard to adjust to and accept but nothing major. One thing I am having a problem with is the way of answering questions. If I answer a question correctly but I do not have a good explanation, then I get the question wrong. However, if I get the question wrong, and have a good explanation, I get more credit then if I answered the question correctly. I just think at times it contradicts itself. Another issue is about attendance. I feel it is my choice to miss class, since I pay for the classes. When I miss days, I pay the consequences. We are in college and it is the students business."

29

Note the remarks about answers and attendance.

"Astronomy is actually the only class other than math in which I am actually learning something, and worth learning too. The lessons to me are really well planned out. I like that it is a hands on based course a lot of times. I wouldn't have thought that you could have done this much hands on work in an Astronomy class. I honestly can say that I am glad that I took this class. I respect the way you initiated the course and explained belief versus accept."

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This was an excellent student who appreciated the new approach.

"Before I took the course, I thought it was going to be more about the stars, moon, and planets. I did not see the course as being numbers and calculating shadows. . . . I studied the whole study guide for Chapter One and Two. I read both chapters in detail. When I got the test, nothing was on the test that was on the study guide. I thought I really knew Chapter two. I studied very hard and no question from the study guide was on the test except number four. I think that maybe the test should go along with the study guide more."

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I don't use study guides, so I think this student is referring to a practice test.

"For the most part I think the course has been an eye opening deal for me personally just because it has made me change my thought process. . . . The only thing I would say is difficult is trying to understand EXACTLY how to answer questions the way you want and how to communicate the right answer correctly."

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I tell my students that I have no interest in forcing them to change any of their existing attitudes or beliefs, but I also tell them that I may say or do something that causes THEM to change something.

"I was really disappointed in this course. I worked harder on this course than any I have taken in my two year college career. I completed all my assignments and will make my lowest grade in college. I am heart broken and my spirit is broken. This course was not designed for anyone who can't pass the tests to make a good grade."

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Somehow, I failed this student and I'm sure this student will never again want to take a science course. I took this issue very seriously and it deeply affected me. However, note the final sentence.

Thank you!

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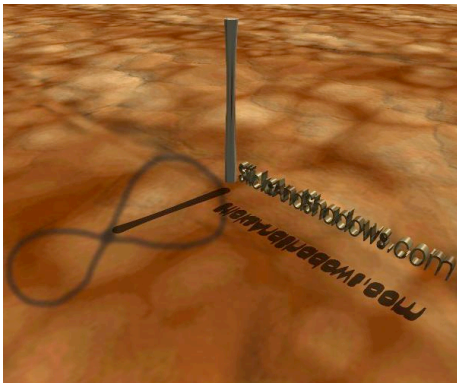
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