

# Detailed Opinions

SENIOR CLASS 2006

*Students opinions gathered the last day of class.*

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Before I started your class I had heard a lot of horror stories about how bad capstone was. In fact I kind of feared it, but after having had the class I am glad that I had the experience. Don't get me wrong I wouldn't want to repeat the experience, but I felt that the experience I gained from this class was invaluable. I believe that the one partner idea was great because by having only one partner it made me work harder and learn more because I had to focus on more of the overall project rather than just a minute part.

Another thing that is kind of off topic is your demeanor. I was scared that you might be what most students consider mean, but when it came down to it you just pushed for us to reach greatness with our projects. In fact you actually complimented our work which I thought would not happen. It made me feel proud to think that you were actually impressed by the amount of work put into our projects and presentations

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I have thoroughly enjoyed the class. I was not sure of what to expect at the start of the semester, but I quickly realized that it was pretty simple. No, this is not referring to the amount of work. This is referring to what your expectations were. I would dare to say that your honesty (bluntness – whatever anyone want to call it) may have gotten you in a bit of trouble. I have to say that it really makes my life easier. I know exactly where I stand, I know what you expect, and I know what you think that we are capable of. Hanging on to that last one – I found it very amusing that you knew what we were capable of doing and of our potential before some of US knew it. It was your dedication and perseverance that pushed us and made us deliver the quality work that we all did. I went to four of the presentations, and I had no idea that everyone was at that level. Let me explain that one: everyone knows who is top of the class, certain students that consistently make the highest grades; what was pretty unreal was that with the presentations I realized that everyone was at that level! There was no top of the class – everyone did a wonderful job.

I do think that the class should be worth more credits (6) for the amount of work that is given. Again, no complaints – I learned more in this class than in any other class that I have taken in the last 2 years. This was the class that brought everything together for me.

Something that I will never say or type again: a turning point in the class for me, which also made me realize the goal of the class, was sometime around mid semester when we had Homework #2 due, along with a presentation and project... and we had no time for all of it. I am not sure if that was your intent, but there was when I understood what you meant by time management and scope. I could have spent 8 more hours on the homework and gotten a better grade (didn't do good at all), but that would have been 8 hours taken away from the project. I figured: 'this is what it is all about'. So, I turned in what I could on the homework – the best answer given the time – and decided to push my project. I don't regret it one bit. And, I have learned an important lesson: Usually, I can do it ALL;

but whenever I can't do it all, I will do my BEST. Simple enough and maybe even obvious to most, but that is probably the most important thing that I take with me.

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First, from what graduated engineers have told me, including those at the exit survey, I do believe this class is more demanding than a job. However, I do not think that means it should be changed. Everyone in this class had to make assumptions in their projects. Did they make the assumption for the best-case scenario? No, they make them for the worst-case. That is how I feel about the class. I am now prepared for whatever I face. There will not be a job that comes along, and I will say that I wasn't prepared for this.

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I know this is probably a pipe dream, but I would like to see either different levels or interdisciplinary projects. I think it would be helpful for seniors to work with different engineering disciplines, as they will in industry. I do understand the difficulty in coordinating such a project. Perhaps, chemical engineering intro students could be used in part of a project to help seniors prepare for managing people before they begin work.

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I must say that when I was first entering this class, I was a little bit apprehensive about the work and everything else. Now that I am finished, I feel a large sense of accomplishment. It may have only been one semester, but I know that I have worked hard and accomplished a feat that I am proud of.

I remember back before senior year, we heard complaints and complaints about this class from other classes. I now know why those people complained and it was not for good reason. Most people do not want to be held to a high standard because they actually have to produce and I feel this was the case in previous years. I feel that unless there is a high standard, we as students never actually obtain a sense of confidence. I know I am leaving this class a lot more confident about my technical ability than when I entered.

My internships in the last couple of summers have been very beneficial to my development as a future engineer. This experience in capstone is the only class that has taught me the same amount that my internships have. I feel it is the only class that is even close (it is probably a little above) to the level of work that I was required to do during my internships. I do realize that I did have really great internship experiences compared to other people, but I truly feel that this class was able to challenge me in the same and even more ways than my previous experience.

I think that students don't realize how important this class can be to being successful in the first years of their career and not. Though I probably will not be spending as many late nights in my career, I have learned many valuable things from this last semester that I will take with me when I leave.

I would like to thank you for your support this semester. I realize how much dedication you have to us. The amount of time that it takes to keep up with all of our projects and still be able to do your other work is incredible. Thank you for helping our class grow and learn from this semester. I truly appreciate your efforts and I know the rest of the class does as well!

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I wanted to be completely honest with you about how I felt, and this is as blunt as I get.

This semester has definitely been a unique experience. You were not like any other chemical engineering professor I had had: you were mean. Sometimes I felt like you were setting us up to fail, telling us to do something a certain way in a meeting, then yelling at us during a presentation for doing it that way. I felt in some instances that you treated us with less respect than we deserved; not the respect we deserve as engineers, but the respect we deserve as human beings. In these moments, I had the thought that you really wanted us to fail, not succeed. That you wanted to push us not until our breaking point, but past it. That if I had given up right then and dropped this class, you would have congratulated yourself on saving the engineering world from an inferior student. But now I'm starting to change my mind. I'm convinced now that you really do care about us and want us to succeed. I'm convinced that you think your method of doing that is a good one, and that even if it caused me undue pain, I didn't quit, and I'm better for that. I'm also convinced that I won't be afraid of any boss I will ever have, because I've already survived working for the biggest jerk I could imagine. So, even though I disagree with your methods, I respect you for caring about us and trying your best to make us into good engineers. I hope we make you proud.

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I have, for the most part, enjoyed this semester and your class. I stayed positive, except for last weekend, and that got me through it. I knew that you just pushed us so that we would do better but still became quite frustrated at the "scare tactic" that you employed. I now thank you for doing it because it did improve our presentation dramatically as well as the quality of our explanation. All-in-all it has been good and I hope that future students learn as much and are tried with as much rigor as you have put into this semester.

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I think that this semester has been a good one. I appreciate how you stand up for your students. It really shows that you are devoted to our success. You do have high standards, but I believe this just shows how much you care. In looking at the work I performed over the semester, I liked both parts. But, honestly, I really appreciate the things I learned about business in the first part of the semester. As chemical engineers, we have many talents, and it is a great opportunity for us to be exposed to business concepts prior to our first jobs. Once again, I appreciate your efforts with us this semester. I realize that it is a very difficult task to baby-sit so many projects.

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I, for once, am rather speechless when looking at the past semester. I feel as if Keshan and I have come a long way in working and learning together. I believe keshan will be an asset to wherever she is in life. I've learned to think more along the lines of a manager/leader...it has been a struggle, but all for the better. I've learned how to solve engineering problems with limited resources. We've learned to develop solutions to problems by making intelligent assumptions. We've grown to be engineers...individuals who are intelligent, can use information in their surroundings to analyze situations and provide the best answer. We've learned how to take harsh criticism and argue effectively...Thank You!

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I was so shocked when you read our names that I honestly couldn't cry, even though that is all I wanted to do. I have never been so proud, excited, exhausted, and emotional in my life. I really feel like I have accomplished something and that I really have put my best into this project. It is really nice to be rewarded, and finally be able to compete with my peers and show what I am really capable of. I am so grateful for this award.

I can't seem to let go of my project, though. I feel like there is so much for to do, and I constantly find myself looking forward to working on the project, even though it is passed that time. I really am going to miss capstone. It has honestly been the one class that I have absolutely loved, other than Design I. This class has convinced me that I do really want to be a chemical engineer, that I am proud to be a chemical engineer, and that I am worthy of my degree. I can't tell you how much you have helped me accomplish this semester. By your constant encouragement and lack of fear in setting challenges in front of us, we have accomplished so much more than any of us had ever imagined we were capable of. This class is honestly a capstone class, a shining and polishing point, a place where everything comes together, and you truly earn your degree and respect.

It is my opinion that no other professor would be as effective as you in teaching this class. It is true, there is a mystique that comes with the mention of your name; everyone who hears it knows they will work harder than they have ever worked, be faced with challenges that seem insurmountable, be told when they really have failed rather than having it sugar coated, and will be forced to defend and justify every single decision they have made. This class is not easy, it is not the cake walk that so many majors have. It is looked at in fear by students, because no matter how hard we have worked to get to this point, we know we know we will never be as prepared as we need to be. Regardless of where you rank in the class, capstone evens out the playing field and gives students a true competition of wit, skill, professionalism, communication, common sense, strength, and determination, all of which are essential in surviving Corporate America. I cannot thank you enough for the many things you have taught me nor the accomplishments you have enabled me to achieve. I appreciate you more than you will ever know, and I congratulate you on a job well done.

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Overall, I'd say this class is hard but well worth it. There is a great sense of accomplishment after submitting the final paper. While I may not agree with everything

you say, I understand that you are pushing us to achieve the best that we are capable of, maybe even farther than we think we can go. I am glad that you were our capstone professor.

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It was my favorite chemical engineering class. You were my favorite chemical engineering instructor.

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At this point, there is so much to say about your class...most of it good. I came into capstone really dreading the work I knew was required and pretty afraid of you based on all the rumors. Now, I can safely say that this has been one of my favorite classes (even with the workload) and it has definitely pushed me more than any class ever has. I found that both Emily and I really worked hard because we wanted to impress you. I know that she agrees with me when I say that we really appreciate your encouragement this whole way.

First, what I loved and learned in this class...

1 - I had a GREAT project, in fact, I think the most interesting project in the class. Although I didn't think I would enjoy the financial, in the end, I even liked that. It is really useful for grad school and I have learned so much about tissue engineering.

2 - I had the BEST partner. I know that I got really lucky on this case, but I love Emily and we worked great together.

3 - I really liked the meetings every two weeks. Although it sometimes put a strain to get a presentation together, it was really useful in keeping us updated and on track. Also, it is nice to hear a little encouragement every two weeks.

4 - You have been so helpful outside of class. This is actually the first class that I have ever gone to the professors office for. You have been incredibly helpful, and I'm pretty sure I wouldn't have gotten by without your supervision.

5 - I have worked in labs that have made me do this much work and really enjoy it, but never a class. It is really refreshing to be able to put everything we have done together and apply it.

6 - I am so happy to get to work on my presenting skills more. You are one of the first members of an audience that has really made me nervous.

7 - The paper deadlines. Thanks for not letting me work my entire spring break on this project...I liked it much better this way.

8 - You taught me how to ask questions and question the answers. I have a really bad tendency of not wanting to question my superiors (military family and all I guess). If you tell me an answer, I generally take it as the word of God and grumble about my feelings. However, since you were not able to focus full attention on the problem, like we were, I was able to question some answers more and lose some of my fear of asking and debating. I think that this will really be useful to me in the future.

9 - I feel like you really appreciate the workload that we put in for you. There is nothing worse than a professor who doesn't understand what kind of dedication you have to his/her class.

Things I didn't like so much...

1 - Of course, hated the homework, but this is a common complaint. I understand why they are useful and really none of the other teachers would have gotten us to do so much work on them.

2 - I did not like the meeting period. 3 hours is a long time (even if we didn't stay the whole time all the time). I just don't do well in lecture style, and for that long.

Finally, I want to thank you so much for how helpful you have been. Over the semester, my feelings have gone kind of in waves. For most of the semester, I actually really liked you and this class and was surprised by the fact at the beginning (people complain a lot when they are forced to do a lot of work). Every once in a while I became really frustrated with the class and that showed in my overall opinion. However, within the last week this class has bounced back into really good favor. I have really enjoyed the presentations and am amazed at how much my classmates accomplished. Everyone was phenomenal. I also really want to thank you for the care that you have shown for our class. I don't know if you have behaved like this for other classes, but we appreciate how concerned you have been with this whole faculty situation. Although I didn't necessarily want the faculty to ask hard questions at the presentations, I did want them to see the work we had been doing.

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With this being our final journal to you I figure you would like it to be our overall feeling about your class. With that said, I think your class proves to us that we are capable of being functioning engineers. Not to be negative, but in order to give an honest opinion on your class, I also think that your class is entirely too demanding and burns out your students. I think almost everyone worked their butts off and I think it would be fair to say I haven't ever seen such a large group of hard working students here at OU. With much experience of being around Sarkeys in the middle of the night I can tell you there are very few people here besides the people crammed into that small computer lab. Thus, I would say that many of us learned that we can push ourselves and get results. However, for most of us, this is not our only class. With finals next week I have a ton of studying to do in order to make up for all the low grades obtained throughout the semester simply because all available time was being dumped into capstone rather than my other studies. But I have worked hard through the semester and do not intent on quitting in the last week, although I have taken some predatory actions in the event that I cannot alter what has already transpired in my other classes. Therefore, I enrolled for intersession history although only as a last resort. I would honestly take the CLEP test before I spent five hundred dollars on summer school. That is my only major complaint on your class. The long nights in the lab knit togetherness in our class and it is sad to think that I will probably never see many of them again after graduation. When we get into the real world I imagine many of us will be suprised with all the free time we will have, although I am already dreaming of what I will do with the time I have available. First on that agenda, assuming I survive the last week of school, I cannot wait to sit on a soft couch while eating a warm, nutritious, home cooked meal in front of the television playing all the recent movies I have missed due to my affairs at Sarkeys.

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Honestly entering this class I had a very bad picture in my head of what type of professor you were. Mainly because of past reputations and rumors, I had something against you before I even started capstone. However, after just two weeks of speaking with you about what our project my entire outlook on the class changed. I could tell that you really cared about us. You were always available, I mean always (midnight on Saturday not a problem) to help. I never one time experienced any difficulties. You were always respectful, friendly, and helpful.

Therefore, let me first start by going through what I have taken from this class in comparison to others:

1). Confidence. Not just in presenting but also in my work. My attitude is very different from last semester. Take for example: Last semester I had 7 or 8 job interviews and did not receive one offer. This semester, when you helped in my job search, my confidence went through the roof. By the end of this semester, I had over 5 offers and could of had more but had to stop because I found one worth keeping.

2). Pride. I spent a lot of time this semester working hard. Everyone from my parents, to my friends half way across the country know what is my capstone project. That was because I enjoyed doing it and took pride in doing it.

3). Attitude towards other. Early this semester we had a talk on attitude. This really bothered me because I did not think that I came off as this type of person. Therefore, I made it my goal for the second half to change this attitude. I took it upon myself to drive our refinery planning team towards greatness. I think that by changing my attitude just a little, my team members did not mind me as their leader, and we performed very well. Thank you for helping me to correct this problem.

Finally, while I did take all of these away from your class, I did it for one reason: I wanted to impress you with my efforts. Sure I do it for my own goals that I set, but much of that has to do with impressing you. I have great respect for you as a professor and when I see that you enjoy my work that is what really pushes me forward. Before our first presentation, we spoke with you about "magic" heat exchangers. I then stayed up the majority of the night and worked on figuring out the magic HE. The next day when we gave our presentation and you said "YES" "YES" instead of "NO" "NO", we jumped with joy. I knew that we had impressed you with our simulations and it made us want to do more.

I really don't have many suggestions on how to teach the class differently. I liked having two homeworks and getting it done before spring break. If I did it again, I might have stayed on one project, but I was lucky in having a great second project. One thing that I kind of missed from the first part of the semester was you coming into the lab. I thought it was really cool when you came in and saw how everyone was doing. Maybe you could sneak a peek more often. It was always very appreciated.

Thanks for a wonderful semester. I hope to stay in touch.

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It saddens me to see this part of the semester come to an end. I appreciate all of your support, guidance, and true dedication to our class and our future. I hope that in some way we have shown you that we respect you and are grateful to you. With your help and the help of all of the other professors, I feel that we are able to approach our future armed with the necessary tools to take on any task at hand. You have not only taught us how to be true engineers, but also how to grow as human beings. You forced us to push beyond our comfort zone and into what is unfamiliar. It made us stronger, smarter, and more defiant. Please continue doing what you do so well....teach. With that, I thank you from the bottom of my heart.

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I have enjoyed getting to learn more about working with Pro-II software that I know I will be working with when I start my job. Also, I think becoming very aware of energy expenditures and retrofit designs will help me to be a better refinery engineer. I am disappointed that my project did not show that the design was good, but critically analyzing the failure might have actually been better for me as an engineer. Thank you for all the time and effort you put in helping me with understanding my project.

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I've enjoyed this class this semester because of the challenge it's presented and how I've been forced to rise to the challenge. Thank you for challenging me.

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This class has made me work harder and longer hours than I've ever worked for any class or job I've had before. Part of this was due to the nature of the class, and part of this was self-inflicted by my personality. I am a recovering perfectionist, and one of the hardest parts of this class for me was determining project results during crunch time when I knew that the project wasn't going to be perfect.

My presenting abilities have been further refined by this class. I've never faced a questioning audience before, and now I know that I can handle it, even if I have to occasionally say that a question is beyond the scope of my work.

My ability to take a project, and determine the scope and depth of it has grown. I've never previously had to determine scope and depth myself, and it is a lot harder than I would like it to be. Due to my perfectionist nature, I want the depth of projects to be as deep as they can possibly go, and the scope to be wide as well. However, this isn't realistic.

The assignments were my least favorite part of the class, because they created weeks in which I didn't make any progress in my project because the assignment had to be finished. In retrospect, I can see how this may correspond to a short-term project popping up at work that has to be dealt with immediately before work can resume on the primary

project, but I definitely did not see the assignments from this point-of-view during the semester. I agree with the policy of forcing students who have done inadequate work to redo the assignments.

Keeping all of the assignments and quizzes in the first half of the semester was a good thing, because it allowed for the projects to become the major focus during the second half of the semester. I believe that this improved the overall quality of the projects, and also allowed us to keep our sanity. You do not make any friends by having a pop thermo quiz on the first day of class, but it made everyone care that much more about the review. That review solidified many of the important thermo concepts in my mind.

I've also seen the importance of taking the initiative to become a local expert at the software packages that are important in my job environment. This was recommended to me by a practicing engineer, and I've tried to do this by learning the features of Word, Excel and PowerPoint that save time and increase the quality of produced work. Also, learning Pro II and GAMS well enough to be able to answer "How do I..." questions from other students has proved useful. My software abilities came in to play in the refinery group, as members of the group looked to me to solve the optimization problem in Excel and also help ensure uniformity of the final report. Both of these tasks would probably have taken longer and not have been completed as well without me.

Thank you for teaching this class, and giving honest feedback, even when it doesn't make you popular. While I haven't always enjoyed the work of this class, seeing the presentations made me appreciate the results of all of our work. I can look back upon the OU Chem E Class of 2006 with pride stemming from what we accomplished under pressure and in a short amount of time.

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Well, I began the semester feeling like a million bucks and by the end of the semester I feel mostly deflated. But, I'm pretty elastic I have a tendency to bounce back, to some extent anyway.

I've already shared that I think the class work load could be re-arranged, so saying that again would be redundant. My new opinion is that groups composed of more than 2 females- without the presence of any males- should be discouraged. Females just shouldn't work together in large numbers for extended amounts of time. Sexist? Perhaps. Realistic? I think so.

My group had issues, and for the most part I was the cause of them. I usually felt useless, and when I did do stuff it wasn't used. I said in the peer evaluation that if communication were better within the group a lot of the issues that became issues never would have had the chance to develop. It's over now. Whatever the outcome I'll have to deal with it. It's funny. I made it through 9 semesters of school, and I'd have to say that I've never had this many issues and stressful situations as I have this semester (in your class and others). At least I didn't end up in the hospital this time.

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Well here we are, the end of capstone. This has definitely been a class unlike any other. We have been asked to pull together all the information, theories, and skills we have learned during our college career that until this point have been scattered throughout our brains in a chaotic mess. This was the ultimate task serving as the bridge that transports us from mere students to "real engineers." While there were a few times when one of the slats broke (well, maybe more than a few) and I was hanging on for dear life, I realized that this experience has made me stronger, more confident, and given me the will to succeed, even when the easiest thing to do would be to let go.

I am thankful for you continuing to give us encouragement in addition to the criticism, which was always constructive and welcome. I know I am one of the people that did not spend much time in your office, but by no means did this have anything to do with you. I unfortunately have a problem with trying to do everything on my own and not admitting when I need help. You have been nothing but helpful and extremely informative, especially when giving advice about the real world.

As for the amount I learned and the skill I developed in this class, it was mostly in regards to learning how to do research. I had no clue how much we needed to read and all the different areas we needed to cover to have a complete project. Having a biotech project was difficult because of our limited exposure to the field in our regular classes, and if I had the chance, I would probably not opt for a biotech project again. The most difficult part of the project was getting started; reading all the journal articles in the beginning was overwhelming when I had no idea what they were talking about. However, once everything finally did come together towards the end, I felt like we did a good job with the little time and previous knowledge we had.

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Now here we are, the beginning of the real world. I thank you and all the professors that put their efforts into developing us into some of the top chemical engineers in the country. It definitely wasn't easy and, to be honest, it wasn't always fun, but it has been an experience that has helped shape me into a who I am today (which is very different than who I was 5 years ago) and that will help carry me on to success in the near future.

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I learned a lot this semester, especially about how to tackle opened ended problems. I don't feel that the quality of my work was as high as it should have been. I do, however, feel more confident in my ability to make decisions, which I really appreciate. This class was extremely challenging, but I so glad that I have taken it. Thank you for your help and honesty.

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So this is not going to be as long as some in the past, due to my huge lack of sleep. Hopefully, it will be sufficient feedback.

I liked the idea behind our project because I am an environmentalist and it was interesting to see how everything came together at the end. This class has been incredibly time consuming, most of the time not leaving time for much else, including eating and sleeping. I think it is hard to compare the different projects in their level of difficulty, and I do believe that some people definitely had to work harder than others. I overall liked the two week system, because it provided us with continuous feedback and gave me the type of interaction that I would like to have with my boss. ( I had a disinterested supervisor last summer at my internship and that kind of limited my potential) I do appreciate being pushed hard to my limits, especially if it only goes downhill from here, but I did not appreciate that there was so much pressure that other classes went out the window and this made those classes more difficult to get a desired grade, even though they are easy classes b/c there wasn't time to devote to them as much as they should have been. From rumors I hear and people I talk to that have had the class years back, I know we have had it a lot better or "easier" than them. I think that the class should still be made hard, but it should be clarified at the beginning of the semester and when students come into your office with questions, when is the time to freak out and not sleep and when is the time to work hard, but don't kill yourself. Many people (not just me) freaked out all of the time adding to their stress levels because of the such high expectations. I do believe that the expectations should remain very high though at the same time, b/c it is great experience for us, once we get out in real industry and it will make us feel more accomplished if we have to work harder for it. I feel like I have accomplished something for making it through your class and that is saying something b/c I am the type of person who doesn't think that I accomplish much overall in general.

For the fairness situation again, some people learned more than others and worked harder than others and in many cases this had to do with the nature of their projects. If expectations can be more mapped out at the beginning for larger process projects, this may help. Additionally, if some sort of model could be developed to evenly distribute the projects based on how much work is being done.

I really appreciate the presentation skills I developed in this class, in chem E in general. I know I have come a long way and "practice, practice, practice definitely will make almost perfect"

I know you know that there has been several complaints on the syllabus and constructively, I would like to say that I think many of the ideas behind these complaints are justified. The grading system based on peer evaluations could definitely more clarified, the requirement of a hard copy for the final report type details should be included as well as a theoretical # of tests that are planned for the semester so that we can see how each one will actually figure into our grade.

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Things went fine for the last few weeks. We did have to “milk our cow” more towards the end, but it allowed us to evaluate our product better and see what the shortcomings in the model are. We got our stuff done without having to stay up late to do it and I think we did a good job on everything.

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In regards to the class format, I say keep going with it. I always waffle between whether I want a class to be easy or whether I want it to stretch me and challenge me. I think it is essential that the capstone course stretch you, and I think the industry-style projects are very good at that. I don't know if industry operates on the same sort of timetable (four months for a single project) or not, but I think it was good training.

Other than instructions sometimes not being clear (I don't remember specific instances right now, but I remember being frustrated with it at times) I have no complaints about the class. I enjoyed it. It turns out I may have actually chosen the right major for me.

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I think I have grown a lot this semester, some of that due to capstone. I didn't like having to take those review quizzes, but going back over that information was necessary. I really enjoyed my project, and, as such, it wasn't as big of a burden as capstone had threatened to be. I learned a lot about trying to keep a constant focus in the project and tailoring the research, presentation, and report material accordingly. Even when we had to change to focus of the report, it was still necessary to maintain an overall message. I'm not sure what else to say, but I'm glad it's over now!

OK, I'm just being honest here. I am truly impressed at how much time and interest you put into your students and their projects. Thanks for being available and for criticizing us just so we will force ourselves to improve. You're really not the way other classes have made you out to be. :) I'm glad you'll be at the banquet! Have a great day.

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I am just glad it is finally over. I have finally passed your class and can move on with my life. One chapter which was dragged on way longer than it should have been is finally over and a new chapter begins.

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Having only two assignments really helps reduce the stress at the end of the semester and makes for better projects. I think the length and difficulty level for them was right where it should be as well. They were challenging but not impossible. I liked the way the projects were set up as well. By some people changing projects at mid semester, it is more like a business setting.

Thanks for a hard but good semester.

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No other professor in my five year college career has made me CRY, and COMPLAIN, and get physically SICK from the stress and anxiety of a class. No other professor has made me constantly be away from my husband and son and stuck me in a little room with no windows with all of my classmates for hours on end. There were times when I didn't eat or sleep for long periods of time. No other professor has pushed me as hard as you.

Then again, no other professor has made me CRY and swell with PRIDE over what I was able to accomplish in a class. This has seriously been the most rewarding class I have ever taken. I have learned so much about the scope and depth of a project, and what it takes to complete an impossible (or so it seems impossible) task in such a short time. I learned how to get along with a person who is SOOOOO different from me, which battles I should fight and which ones I should let go. I want you to know that you have really made me a better engineer and a better person, honestly. Thank you so much.

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It feels good that my project is finally done but at the same time I think I will kinda miss it. I really enjoyed working on it and like the fact that we were "encouraged" to work so hard on the projects because it really makes them feel like "our" projects.

That being said, my favorite part of the class was how my confidence and critical thinking were improved because of the level of intensity and demand of our design projects. On the flip side, my least favorite part of the class was the assignments. They seemed less needed in a way because we would already be doing the same things for our projects. Maybe they could be replaced with several homeworks that accomplish the same thing. To keep the workload the same, more quizzes could be added to help refresh old material and cover the new stuff.

Thanks for an excellent capstone experience and have a great summer.

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Overall, I think this was one of the best classes I have ever had. It made me work, it made me think, and it challenged me personally and professionally. It was tough sometimes. I mean, it would be a lie to say that it wasn't, but it was the kind of tough that made you feel like you accomplished something when you were finished. I think it kind of brought the real aspect of chemical engineering together with the academic part. In a lot of classes the best way to get through the material is to assign homework, and take tests, but in this class it brought all the other classes together. When I started this class I was very, very nervous. I didn't have very much confidence in myself or my education. I new I had learned, but it didn't feel like enough. I was challenged by the tests and the homework to do them myself. I was so used to doing homework in a group, and getting help when I didn't understand, and I didn't think I could do it at first. But I had to, and I did.

It turns out that I actually am kind of intelligent.

I enjoyed the group project, but I am glad it is over. There are many different kinds of people in the world, and I think I am lucky to be apathetic enough to get along with most

of them, but caring enough to get the job done. I think sometimes we get too wrapped up in grades and test scores while we are in college and we don't look at the bigger picture. In less than a year, nobody is going to ask us about our GPA. There is so much life to live now. We are young, and this should be the best time of our lives. I would like a good grade as much as the next person, and sometimes it is hard to see that the real achievement is not the "A", it is the fact that you did it, and did it well.

The class was hard but well worth it. Thank you....I appreciate it.

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As far as the class is concerned, it was very challenging. First of all it is way more demanding than a normal 3hr class. I know it will cost more to make it worth more credit hours but the department is not being fair to the students in stating it as a three hour course, when actually it is more realistically a 6hour course. Secondly, the quizzes are great for reiterating what we have learned in past ChE courses. I really think it is a great idea and the review sessions that you use to give us the needed tools from each subject seem like they will help when we start working. Third, the homework was something of a nightmare for me! I know it is designed to be difficult, make us think and learn how to handle tasks we have never dealt with before. I like the idea but with the added time consuming factors of quizzes and capstone projects, I was forced to decide where to focus my efforts. You have said that this is the purpose of the class. So I guess mission accomplished. I just think that students should not have their undergraduate degree hang in the balance if they mishandle this intense pressure. I am not afraid of failing this semester, I just know that while trying to bring out the best in a person, some people break in the process, even though they are good students....sort of going back to the three credit hour course and the actual time required for the course. It would have been nice to see the correct solution methods for the h/w assignments. Fourth, I have had the opportunity to be in good groups and bad groups. Well, I don't have a lot to say about that, except that sometimes folks just don't work good together, so I will not comment on the mixing and matching of groups, it is way to complicated for me to give any constructive advice on. Fifth, projects, two tier projects was a great idea, in my estimation. This gives you a chance to establish your self in the first half of the semester or recover in the second part of the semester. I don't agree with personal projects, I know we didn't have them this semester and I hope it stays that way. :o) I really appreciated the private presentations with you. It did two things, gave us practice and allowed you to give us one on one input to make our project better. .... Sixth, TAs, I don't know exactly how valuable they are. I can only speak from my perspective. Mr. Nguyen was helpful in proofing our excel sheets and calculations. But it took awhile to get him up to speed on what we did. Besides he wasn't very helpful with ProII, but his expertise may be in another area. But let me say again, he was helpful in pushing us to make our excel sheets user friendly and easier to follow. Seventhly, I won't go into detail again, but I believe this class does us a service before going on in our young professional careers. And I think it is needed, I am thankful that you take the time to push us and be there for us!

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Overall the experience was more beneficial than in any other class. Some of my class mates say that you don't teach us anything, that we have to teach it to ourselves...after I stop laughing I try and convince them that a) they're wrong and b) it's a hell of a lot more beneficial than being spoon fed. I really don't learn a lot about happiness functions or regret analysis, but I did learn that I could try and tackle an absurdly complex problem, even though I might get kicked in the face a few times. 10-20 years from now, I think just having this experience will have had more of an influence than anything else within undergrad. Hope to see you at the banquet!

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I think this class teaches me that getting the right answer is not important. All you have to do is give the answer you want. I think this violates my academic integrity and beliefs. You justify yourself by telling me not to argue, but really I am just trying to find the truth.

"No honest feedback is possible because of fear of reprisal (journals and blackboard surveys are not anonymous). (2004)." I agree, but here it goes anyways.

Also it really upsets me that you didn't disclose your source for your claim. A claim is just a claim unless you back it up. In addition, every time I ask for something related to project you respond by giving me life advise.."I'm lazy...I'm going to be fired from my job.... Bosses will hate me..." Sometimes I feel like you try to sabotage me, what you ask for is not clear and you change your position daily

"Instructor changes his mind daily confusing the students, (2005). "  
Need more specific instructions (2001/2002)

Your instructions were to develop a model, inputs and outputs- and you gave us a book with correlations in it....vague at best. What inputs? cost? energy? building? How exact? Using theoretical models or experimental? Then it was develop a model using only kinetic equations. Then you said "show me where they still use correlations"---the book you gave us was from 2001 and they cite things from 1951-hence they still use it. Performance evaluations are too vague (2005). -Yep

.....

I feel at times you are unprofessional and take me defending myself against your attacks personally. Things you say like "put it mildly, but I am sure that when you get a job you will wise up on this"--I think this is a low blow, and you can keep it to yourself. To tell me I am going to be fired from my first few jobs, really isn't helpful or constructive.

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..... May be in the future you could start the semester with a week period that you go through some of the past projects and discuss the different project types. This may help students in choosing a project that best fits their style or interests.

I feel that the homework assignments were entirely too long. I did like how they were both completed before spring break though. The quizzes are ok but I found it hard to

study for them for a variety of reasons. One is that most of the material I had a few years ago and with different professors. The nomenclature used is different for almost every text and professor that teaches the subject. I think that you should also return all graded material with comments and a point breakdown. I feel that knowing what you did wrong is a very important part in correcting these errors in the future.

I still feel that the class is not properly represented in the curriculum. A six hour class would be more appropriate. I don't mean that you should remove any ChE classes but a humanities course could be removed. The credit hours earned should reflect the amount of work that is required.

I would especially like to thank you for the opportunity to provide some constructive criticism. You make it very clear that you want to know the honest opinions of the students and not a bunch of sugar-coated comments.

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Honestly, this semester has been one of the more challenging semesters at my time here at OU. Priorities were sequenced (kind of like our PROII file) to facilitate convergence. I learned a great deal this semester and I owe that to you challenging everyone of us personally. I realize you expect a lot from your students but I also see that you put in just as much effort and passion into what you do and into your students as we did into our projects and that is what motivated me to work harder and push my limits further without minding. I had a great time working on the project overall (honestly, some days were horrible, i developed insomnia at times, health was sacrificed, proII addiction)...

I would like to conclude this journal by sharing something with you...I was asked by someone why I was still working so hard on capstone and that since there is only two weeks of school remaining until we graduate, I should enjoy and take it easy...I realized that I have worked hard up to that point and that my grade will be most likely good but the reason I still continue to work hard on capstone was because I was at a point where I wasn't doing it to just make an A or to not fail...I was doing it for myself. I have only two weeks of school left and now its time to work for myself and enjoy my work because a lot of sweat and blood went into it...i honesty feel in the end, i worked on the project not just for you or as a requirement but for myself...to prove myself...to push myself to see how far i can get...because this is the last chance i will get to do it...i told the individual that this is like the final lap...no one ever slows down when they can see the finish line. sorry for the length of this journal but I wanted to share with you my experience this semester. Thank you for seeing in us what we sometimes forget to see in ourselves. I leave you a quotes...

"Every worthwhile accomplishment, big or little, has its stages of drudgery and triumph; a beginning, a struggle and a victory." **Ghandi**

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I won't lie, I was a little sad as I turned in the hard copy Friday at about 4:30. Thoughts on this project...I wish I had more time. I felt it took me a good amount of time to catch

up. When I finally caught up, I wish the report and project had not gone the way it had, and that more emphasis would have been placed on different things, within the group that is, prior to spring break. Course, I can't really hold that against them, hindsight is always easier to see. But, I feel like more could have been done better on it. But, with the time available, I think the best product was given, in light of the starting position.

As for the course in whole – It was a challenge. A lot of work, a lot of time committed. What could have been better? I don't know what more you could have really done, within reason. Surely people will gripe about this or that, but not really consider what it takes to implement their whines. I don't think the little groups were bad. Many students feared this would result in their doom if they were placed with a slacker. We did not have a lot of slackers, and from what I hear, the ones who were with slackers were given the ability to perform and be evaluated separate from their lazy partner, so that seemed to work out well. I think the small groups made it feel like we were doing more than we might have if the groups were bigger, but I do think it pretty explicitly exposed those who did not want to give effort.

Personally, before the course began, I heard the montage of horror stories about the evil that lurked in the heart of Baga. I heard so many first hand complaints. I am convinced these stories were real manifestations of frustrations with students, as well as personality clashes with the way you think compared to students. However, I think many of us were motivated and gave authentically real efforts, and so we did not have to experience the common response.

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Well, this has been quite a semester. I feel like I've learned a lot. Some of it was about engineering, but most of it was about what I'm capable of doing and how far I can really push myself. Sometimes I felt like you pushed us so hard, and expected so much from us, but I feel like your high expectations in turn challenged us to rise higher, and I did better than I would have otherwise. Its funny, but as much as you frustrated me sometimes, I found myself wanting to do a good job just to win your approval - it came to mean a lot to me. Sometimes capstone seemed like it was too much - it seemed to overbalance all the other parts of my life. But most of the time I was able to keep things in perspective. I mostly just had to devote more time to it than I've ever devoted to school before, and it rearranged my life. Looking back on the semester, though, its pushed me and I've grown a lot. I also came to genuinely care about the project - I didn't just want to earn a good grade, I wanted to do work that I could be proud of, so I cut less corners and took less short cuts and paid more attention to the little details that just make a finished product that much better. I used to think the way that you ran this class was too hard and too demanding, but as I look back on the semester, I'm glad you demanded so much from us, because it made us give our best. I also want to thank you for all the time and effort you put in to this class. You were here for us way more than I would ever expect a professor to be, and you truly seemed to care that we gave our best. Overall, its been an extremely tough semester, but its been a good experience.

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The class was a great experience. It is one of the few that I feel like I have taken something away from. I feel like you actually made us do things in our projects that we never would have thought of doing. It also felt like there was a goal and that we were not just going through the motions because you told us. I feel that you are one of the best professors that I have had. You genuinely seem to care about your students and you are also excellent at asking the appropriate questions to guide us.

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I must reiterate that I have never had to work this hard for a project, and that I am pleased to have done so. I am accustomed to OU being relatively lax, since the average student is not that great. I have been pushed by professors/teachers/mentors in the past, but this time I felt compelled strongly to make a good project. At some points, the threatening became too heavy of a burden, and put a damper on our spirits to the point where we just became frustrated. Fortunately we were able to work through all of our problems, and the end result was excellent. Thank you for motivating us. Otherwise our project would not have been that great. We are in a great position for entering graduate studies, and our preparation competes with MIT, Caltech, Berkeley or whatever other big-named schools. We will enter academia with a strong undergraduate background, and we now have good experience integrating different theoretical models towards novel applications – which will surely help along the PhD trail. You have my deepest thanks for pushing us to excellence, and I am sure that similar pressure for other future grad students will benefit them as well (even if they get a little over-frustrated). We are grateful to have survived the capstone process, but more than that, we are proud of the work we have done, and pride is something we had to earn for ourselves. I'm treading too close to philosophical grounds at this point, but that is the type of conviction I have for future studies, and thanks again for the preparation.

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Senior Capstone was perhaps the most intense thing that I have ever been through. To see some of the smartest people that I have ever met fall to their knees was both frightening and amazing. It felt like misery in misery's company. I have learned a lot though. Surprisingly, Capstone has really influenced my spiritual life. I began asking questions like: Why am I a Chemical Engineer? What is the purpose of working? .....

One of the biggest things I learned was how to manage the scope of a project. It is always profitable to look at the big picture first, and then worry about the details later. The details will come, but they will eat you up if you don't have the big picture.

Another thing that I learned was how to work with people. Management is not about sitting back and hoping that things will happen, but about moving forward and getting things done.