College of Engineering, Cornell University
Course Evaluation Response Summary
Semester: Spring 2013 Course Owner: MAE
Course: TAM 2030 Lec 1 CID: 11867
Instructor: Ruina
102 Responses, 163 Enrolled, 62.58% Response

Question	Mean	Count	1	2	3	4	5
1. How valuable were the assigned readings? 1=taught me little; 5=extremely educational	3.28	94	4	16	33	32	9
2. How valuable were the homework and/or computer assignments? 1=taught me little; 5=extremely educational	3.99	98	1	6	13	51	27
3. How valuable were the laboratories? 1=taught me little; 5=extremely educational	3.76	91	7	8	14	33	29
4. Rate the examinations in this course as a test of your knowledge. 1=too easy, not adequate; 3=adequate; 5=too difficult, not a fair test	3.78	99	0	3	36	40	20
5. Did the lecturer stimulate your interest in the subject? 1=not at all; 5=stimulated great interest, inspired independent effort	3.66	99	2	10	29	37	21
6. Was the lecture presentation organized and clear? 1=disorganized and unclear; 5=very organized and lucid	3.81	99	5	3	25	39	27
7. Was the lecturer willing and able to help you overcome difficulties? 1=was of no help; 5=was very helpful	3.99	95	4	4	18	32	37
8. Rate the overall teaching effectiveness of your lecturer compared to others at Cornell. 1=worse than average; 5=much better than average	3.74	99	3	7	29	34	26
9. Was the recitation organized and clear? 1=not at all; 5=very organized, lucid	3.97	96	5	5	17	30	39
10. Was the recitation instructor willing and available to help you overcome difficulties? 1=was of no help; 5=was very helpful	4.20	93	4	1	15	25	48
11. How would you rate the recitation instructor's command of the course material? 1=poor command of material; 5=excellent command of material	4.19	97	3	3	15	28	48
12. What was the overall quality of the recitations and your recitation instructor? 1=worse than average; 5=much better than average	3.90	96	5	8	16	30	37
13. Overall, how does course compare with other technical courses you've taken at Cornell? 1=poorly, not educational; 5=excellently, extremely educational	3.70	97	2	5	29	45	16
14. How many hours each week did you spend on this course outside of class/lab/recitation? 1=less than 2; 2=(2-4); 3=(5-8); 4=(9-15); 5=16 or more	3.19	99	3	15	49	24	8
15. How prepared were you for this course? 1=overprepared, it repeated material; 5=underprepared, course assumed unfamiliar knowledge	3.14	99	2	6	70	18	3
16. Was the code of academic integrity maintained in this course? 1=no, often violated; 5=yes, well maintained	4.70	99	1	1	6	11	80
17. Most important reason for taking this course? 1=field or major requires it; 2=prerequisite for further courses of interest; 3=interest in subject matter; 4=reputation of the course; 5=reputation of the instructor	--	98	86	3	5	2	2

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The instructor provided these special instructions:

Extra Queston #1:

MAE gathers mid-semester student feedback in an effort to improve course delivery. Please comment on any changes you observed in this course since mid-semester and whether they improved the effectiveness of the course.

Extra Queston #2:

Did the four 2-hour long problem sessions help your ability to solve problems in this course, or more generally? Were the problem sessions an efficient use of your time? Why or why not?

Extra Queston #3:

How could the problem sessions be improved?

Extra Queston #4:

Would you recommend 2030 keep these problem sessions, revert back to a physical lab (like 2020), or use a mix of labs and problem sessions. Please elaborate.

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1. Please comment on the strengths of any aspect of this course (e.g., the lecture, recitation, laboratory, computing, text, homeworks, examinations or course content).

100382: I absolutely love almost everything about this course. And this is literally only the second positive review I have ever given a technical class at Cornell.

First, I really like the textbook. On the first day, when he told us to go buy the textbook he wrote, I assumed he was just a cocky dude who wanted everyone to buy his book and know how awesome he was and make all kinds of money off of his book. Couldn't have been more wrong. First, he told us where to get the book free online. Also, his book is fantastic. It has really great examples. Also, it's occasionally pretty humorous. It's also funny reading the book and having him as a professor, because you can really hear him saying all of the ridiculous little comments and jokes and phrases in his book.

Also, the homework problems which he assigns for homeworks are typically very relevant and make you understand the concepts of the materials, rather than just making you do problems with given formulas. After finishing each homework, I felt as though I understood the material very comprehensively, and this was reflected by my grades on the respective questions on the exams. In the same way, I skipped or slacked off on a couple of homeworks, and realized that when I got to the problems on the test covering that stuff, which I did terribly on. To me, that was a sign that the homeworks were very helpful, and it was reassuring that I was putting in all of the time on the homeworks for a reason. In so many classes, it feels like you are doing homework just for points, or because your teacher is sadistic, but I know that I really appreciate it when I feel like homework is beneficial to learning material.

I also felt that the exams were a fair way to judge conceptual understanding of material. I never looked at a question and thought, "we were never taught this," or, "this question is unfair," or, "he's trying to trick us with this one." Which is what I feel like on LITERALLY EVERY OTHER EXAM IN THE ENGINEERING SCHOOL. In every other class, almost every question, I have to ask, "how are they trying to get me to screw up here?" I have never felt that way on any exam in this class. But I digress. The questions that I bombed on the tests were a result of me slacking off during those portions of the course and mailing it in on homeworks or sleeping in and missing lectures.

This course is also one of the first courses I have taken in the engineering school that I actually enjoy. The first part of this is the fact that Professor Ruina is actually a pretty funny guy sometimes. He never takes himself too seriously and jokes around, which makes class infinitely more bearable. From my experience at Cornell, sitting through most technical classes is an endurance test. You really have to actively try to both stay awake and pay attention. And I actually really enjoy engineering. However, this challenge really didn't exist in this class. He is excited about the material and wants you to be too, but understands that you probably won't be as excited as he is and doesn't try to ram it down your throat. He just seems like a very down to earth guy, which makes it easy to feel comfortable asking questions. To be honest, this is really the first technical lecture that I have felt comfortable enough that I would ask a question if I didn't understand something.

Also, the class demos are pretty helpful. This is the first class at Cornell that I have had demos in, and I think that they contribute very well to learning. It's easy to just accept numbers that you churn them out of formulas, but actually showing you the practical results of your calculations really helps you understand what's going on conceptually. This understanding helps later when you mess up a sign convention or something and get a wrong answer. If you understand the true meaning of what's going on, you can then catch yourself and realize that your answers are inconsistent with what should be happening, and go back again and fix your solution.

The way that i-clickers are used in this course is also implemented very well, in my opinion. When he asks us an i-clicker question, I'm not frantically trying to just get the right answer because my grade depends on it, I know that I will still get most of the points for participation. This makes me actually try to figure out the answer logically, which is the entire reason for these questions (I'm guessing). In MAE 2120, you get 0 points for a wrong i-clicker answer and 1 point for a right answer. And no one gives a damn about understanding the material, but just frantically tries to ask as many friends and TA's as possible at which answer is right to save their grade. It's the absolute worst and just makes everyone hate the professor and the material. But anyway, I also like that typically when he puts up a question that we probably don't or shouldn't understand yet, he keeps the poll results up on the screen. It helps everyone to still get

the points for the right answer and still understand the material. Because he actually explains why the right answer is right. WHICH SO MANY PROFESSORS ACTUALLY DON'T DO WHICH MAKES LESS THAN NO SENSE.

Another great feature of the class is the website. The site has the entire class schedule laid out, which is great. You can find literally anything about the class very easily on the site, as it is very clear, and things are in places which make sense. At first I hated that we had to use this site instead of Blackboard, but it is incomprehensibly better than Blackboard, which sucks with its organization.

Another feature which I liked was the lab once every three weeks. I thought that it was a great idea and helped a lot, but it sucked that it was only every three weeks and was like 3 hours long.

Finally, the grading scheme of the class is fantastic. Although about half of the class doesn't actually understand what it is, it's clear that the professor employs such a complicated scheme specifically to help students.

If some administrator or something could pay Ruina to give a workshop to all of the MAE professors on how actually be a decent teacher, that would be great. Because I abhor most of my classes and professors, but I really liked this one. In just about every way. And I know that I'm not the only one who feels this way.

100403: Recitation was most helpful for the class.

100571: Kevin Kirche was an excellent TA. Ruina is a fairly good professor, although his lectures are very disorganized

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100630: My TA was very helpful and I thought the material was useful to learn.

100795: Fantastic lecturer. Important material.

100809: really love this course

100909: Ruina is very organized and provides ample study material through old websites and lecture notes online
helpful solution manual
continuous office hours all monday and most of tuesday

101102: Textbook was helpful and professor clearly was very knowledgable on the subject matter. Provided homework answer key was very helpful. More professors should do this. I learn more when I'm able to get aid from a solution during the problem solving process than struggling for several minutes only to not get anywhere.

101457: Ruina has character. Lab are really helpful in understanding the material.

101617: The instructor really has a great spirit about teaching the course. It was enjoyable to attend his lectures.

101790: Lectures were very clear and demonstrations were good. Sometimes quiz questions were difficult to follow even after explanations. Lab sessions were not helpful. Lectures moved at a good pace and were very helpful. The homework helped a lot for preparing for exams. I like the grading scheme for this course too. The tests are mostly fair, but I felt that it was necessary to have the extended time. I felt that the tests couldn't be finished in only an hour and a half, and as a result, I am concerned about the final.
My section was extremely helpful. Kevin taught me a lot, and was a great TA. He was very clear and very organized. He made dynamics seem simple and would give each student individual attention. He also met with me outside of class to explain topics to me. His office hours were great too.
I liked that this course had office hours everyday. It was very helpful. I also liked that we could do test corrections. However, I am not sure if it is fair that you can only do test corrections for problems that you got less than a 20 on.

This means that two students can end up with the same grade on a test where one student got a 20 on each problem from the start and the other student got grades of less than a 20 on each problem. It may be fair to slightly modify this policy.

101849: Very tough course. Videonotes are nice.

101967: Andy Ruina is a great guy and great lecturer. At times can be quirky but helps keep the class lively.

102171: The exams were very fair.

102483: Labs were extremely helpful, professor seemed willing to help students.

102544: Ruina is very intelligent and has the right attitude towards teaching.

102551: Content covered in lectures and recitation is very clear.

102651: They were good

102811: The demonstrations during class definitely kept my attention.

102928: I think the subject matter of this course is absolutely fascinating and I thought Professor Ruina did a pretty good job conveying ideas and concepts. His excitement about the class also helped me get excited about learning this stuff, which is always good.

102961: The course is very interesting and educational, with a very fair grading system.

103073: Homework was very helpful in learning material. Test were very fair.

103444: I really enjoyed the labs. I thought they were much more helpful than traditional labs. Recitation does not give enough time to do hard questions in much detail so the labs were a very good supplement. Ruina is also definitely one of the best professors I've had at Cornell, and it is clear that he cares about his students doing well (which is pretty rare)

103761: I found the lecture to be stimulating and exciting - homeworks were very valuable for learning the material even if they did take a really long time. I have definitely become more comfortable with MATLAB as well which is always a good thing.

104086: Recitation TA was very knowledgable and willing to help. He met with me twice outside of office hours/section. Lab TA was also very good and working on previous exam problems helped with studying.

104213: I liked lecture in general
I liked the course in general

104451: The labs were very good, mostly because my time always occurred the week before we would have one of our tests and could be used to study for the test.

104610: Malika was a great T.A. She was helpful and chose good examples to go over in recitation. I also went to several of her office hours and she was extremely helpful.

104614: Demos were great in lecture.

104639: Professor Ruina made lecture interesting. I think the demos were really useful. I liked the problem solving sessions. I thought they were helpful and could have had more than 3 for the semester.

104657: Lab sessions and recitations were generally very helpful.

104748: I really loved all the demos that were done in class! Definitely made coming to lecture more entertaining and helped me understand what was going on! And Professor Ruina making the bicycle fly was definitely a plus! Also, I appreciate the amount of office hours that the TAs hold.

104839: This was easily one of the best courses I've taken here. Going to lecture was as close to being a pleasure as going to lecture can be. It is rare that a lecturer can actually teach you how to THINK about problems and not just solve them, but Prof. Ruina always provided lucid, methodical, intuitive explanations of concepts that gave me a way to think through a problem, not just use rote knowledge. It was funny that in one class he claimed to have no natural ability at teaching, because he is damned good at it.

104877: Pencil and paper exams were fun. MATLAB coding on exams was not. I would rather do MATLAB on homework or see it in class or in problem solving sessions than on exams.

Problem solving sessions were very helpful. Probably would have learned 5x more than the physical labs which we don't have this semester.

104907: Extremely well-taught.

104928: Instead of labs, we has problem solving sessions. I think that the problem solving sessions are really helpful.

104934: Recitation was super organized and helpful. TA was one of the best I have ever had.

105279: Homework was helpful in understanding material. Recitation section was good.

105330: The lecture and the demonstrations really stand out.

105676: The course did a good job of putting together many different concepts that had been learned in previous courses in order to solve new problems. I also liked how the conceptual information was emphasized. It was more important to be able to set the problem up and understand why the problem worked that way than to do all of the algebra.

105822: Demos during lecture were very educational and kept me awake during class.

105860: Lab were very helpful.

105962: Labs working through problems helped, grading scheme is fair, test corrections are learning opportunities

105972: Very brilliant prof

106021: I liked the problem solving sessions. Lectures were usually clear and easy to follow. It was easy to ask questions in this class; Ruina never minded stopping and explaining something. He always actively encouraged

asking questions, sometimes to a fault.

106159: The discussion for this course was extremely useful. Kevin explained everything in a very organized and clear way, and the information he gave us was always useful and relevant to the homework and prelims.

106613: I really like the professor's attitude towards grades and the subject material. His philosophy that if you tried, put in a decent amount of effort, and showed interest in the material, you would at least pass the class. I really thought this was my most interesting class this semester, even though it was really hard. I like how he offers the regrade option because it makes us go through and really see what we got wrong and how to get the correct answer.

106688: Ruina's grading style seems to be all about the student and I love it. He is very transparent about everything and I really appreciate that.

106704: Strong Course great instructors

106726: I felt that the labs for this course were very helpful. They allowed me to view the problems differently since I was able to work with others who I normally would not have worked with. The lectures were very interested although I feel that the lectures with MATLAB were not very helpful. The book is kind of muddled but nevertheless I did gain an understanding of the course material from it. I found this course very challenging but I believe that is because of the subject and not because of the professor. The professor is very helpful, funny, and strives to help his students succeed. Ruina's lectures and examples with bikes and such were also very helpful.

106727: Ruina was very funny and engaging. He is the most amusing professor I have had yet... or probably wil have. I like the problem solving labs. I think that they were more effective than an actual lab.

106856: The labs and recitations were very useful. I learned a lot through them. The TAs showed us how they thought about questions and were always willing to help us if we did not understand the material.

107081: n/a

107130: I felt that this course certainly held my attention overall, and was also one of the most fair courses I have taken so far. The ability to make corrections on the examinations was a greatly appreciated change of pace, and the accommodating faculty and student graders really helped me out a lot.

107171: The Labs were helpful, I liked this course

107193: The 19 big point grading system. Allowing me to skip all labs, lectures, and discussions while passing all prelims with 80% or above due to corrections. Hopefully the final goes as well.

107232: Exams were generally consistent with what had been taught in lecture. The problem solving sessions were also very helpful.

107280: The lecturers were helpful and I liked the problem sessions even though I initially thought they were a pain.

107288: Homeworks were helpful

107340: The lectures had very good demonstrations and the examples shown were very useful. I liked the professor begged us to ask questions in an effort to engage us and he often accommodated our requests for extensions on homeworks and test corrections. I thought the problem solving labs were where I learned the most material. My TA,

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Matt, was one of the most helpful TA's I've had at Cornell. It also helped that 3 of my 4 meeting times happened to be the day before all three prelims, so it helped me prepare even better than I could on my own.

107361: The matlab was usful. Im much more comfortable with it

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107478: Prof. Ruina was very entertaining in his teaching and it was very refreshing to have a professor who actually acts like a human being with a personality, rather than a robot designed to talk at students.

107704: I appreciated the professor Andy Ruina, and the laboratory sessions although very long.

107727: This lecturer is the best one I've had at Cornell. Ruina was extremely organized, good at explaining things, and could answer any question that the students had. It was clear that he has many years of experience teaching the course. Huichan was also a great TA. There was a bit of a language barrier at first, but overall she was extremely knowledgable about the subject and had very organized and effective recitations. She used applicable problems that prepared us well for the exams. The problem solving sessions were also very helpful and a great way to incorporate lab into this class. (In fact, I wish we had one every week.) The exams were fair. Homeworks were pretty helpful, probably because the professor wrote the textbook so obviously everything there was relevant to test questions and problems from class. I really liked that the lectures were posted online so that we could re-watch them when necessary. The class was also very laid back, with an extremely lenient grading policy, which made it relaxing and easy to enjoy. I didn't have to worry to get so stressed out about the class, but I still learned a lot. More professors should model their classes like Ruina.

107741: Kevin Kircher was great. Everything I learned in this class, I learned from him.

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2. Please comment on the weaknesses of any aspect of this course (e.g., the lecture, recitation, laboratory, computing, text, homeworks, examinations or course content).

100382: I thought that the labs should be once a week and one hour rather than once every three weeks and two and a half hours. They were very helpful, but only for the weeks that you had them. Plus, everyone was sick of standing and writing on a chalkboard after 2 straight hours of doing it.

Also, I HATED that we had problem sets due on the same day as exams. Incredibly infuriating. Also, this semester, literally every exam in all of the classes that we all take were on Tuesday nights. And dynamics HW was due on... wait for it ... Tuesday nights. This semester I had an exam almost every Tuesday night, and also had to do the damn dynamics homework, which was the worst. So I lost my mind every Sunday through Tuesday night, then after my Tuesday night exam I'd have nothing to do anymore and collapse and sleep for like a day. Please, the worst part of being an engineer is the concentration of work and the ridiculous stress that it causes. This semester, every MechE is taking the exact same classes. So please try coordinating with other professors teaching these classes. Everyone would appreciate it SO MUCH.

100403: The lectures were often a bit boring. Not due to content, or pace, or even the professor. I think it was just boring by nature. The laboratory sections were too long. There is no need to do homework problems for 2 hours. Also, I would have preferred a bit less Matlab in the homeworks.

100571: disorganized lectures, professor is still above average

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100630: I felt that labs were often very disorganized and the TA was often confused and unable to help. The exams and problem sets were quiet difficult. Professor Ruina has a strong understanding of the topic he teaches but seems unapproachable to students.

100795: Problem-solving sessions weren't always the best, some homework would have been more helpful with more/better solutions to learn from.

100809: office hours sometimes aren't the most helpful

100909: too many matlab questions per homework assignment
when doing matlab in class, the lights should be left on because I was falling asleep in the darkness
not complete solution manual

100980: homeworks need too much time.

101102: Malika Grayson, my TA, was by far the most incompetent TA I have had at any course at Cornell. I never felt like she knew more about the subject than I did, she was always unprepared for recitation (even admitting it several times), and I felt like it was a waste of my time. Labs an awful waste of time as well and often dragged on. I would get more experience on the subject matter through a lecture style lab than struggling on problems with a partner for 45+ minutes only to have the problem solution not be explained. Matlab was technically not a prerequisite for the course, but heavily used throughout which was not appreciated.

101457: The speed of the course is fast. The textbook is not a pleasure to read.

101617: The problem sessions sound good in theory but were a waste of time for me.

101790: I do not think it is appropriate that the professor would sometimes "make deals" with students to earn small amounts of extra credit if they could solve a challenge problem in office hours. Since these challenges were not

extended to all students, it gives somes students an unfair advantage.
The textbook for this course is too wordy. It has good content, but does not need to have so many words to convey the same ideas. The same goes for the course website.

101967: At times it didn't seem like lecture and homework lined up well. Lab was pretty much useless.

102094: I did not know, coming into the course, that MATLAB would be used so extensively. Therefore, I struggled in the beginning. make sure that this fact is announced clearly to rising freshman who will take the course because it is difficult to understand what the professor is doing at times on MATLAB if you are unfamiliar with it from not having used it in such a long time.

102171: Compared to the Statics textbook, the Dynamics textbook is not as clear or readable.

102483: Textbook was written by professor, so lectures were often identical to the assigned readings. Textbook doesn't do a good job of explaining things.

102544: 1) The grading policy has been modified so many times (as a result of student suggestions) that it way too complex and gratuitously pandering to students who want opportunities to raise their grade. I would rather have a simpler grading system like almost any other class.

2) Lectures are very slow paced and I often feel unprepared for hw and tests since we do very few examples in class or don't have enough time to finish the examples. While understanding the concepts is important, I need to see several examples to understand how to solve a problem. Ruina is great at asking for questions but sometime we waste lecture time when he feels the need for someone to ask a question.

3) I wish Ruina would start each lecture by introducing what we are going to learn and how this is compares to what we have already learned. A lot of stuff we learn is a repeat of phys 1112 but it is formatted differently which confuses me. Also, by the end of the course, I was unable to determine if we were learning new material or not since Ruina would just do examples out of thin air and didn't explain what concepts they were testing.

4) The textbook is very thorough but I found it a bit disorganized and it took me a lot longer to learn concepts than other straightforward textbooks (like the Beer Statics Textbook which is excellent).

102551: homework solutions aren't very good sometimes. Examinations are hard and take a lot of time.

102651: None

102805: Although MATLAB is an important concept to learn and practice, the course assumes you know too much. A walk through of the basics as applied to dynamics problems would be helpful during section in order to ensure there is no confusion from the lecture or homeworks/exams.

102928: I felt that the homeworks did not do much for me; I wish they had been more applicable to things we were learning and to exam material and less "experimental."

102961: The course should be more focused - sometimes it's different to tell what I should be taking home from the lectures.

103073: Homework didnt always seem to line up with what we were learning in lecture.

103444: Sometimes lecture had too much theory and not enough math. I struggled with the parts of the course that

required differential equations as I had not taken it in over a year. I would have appreciated if he did not assume that we knew so much. This was mostly for the springs part of the course. I did not know how to find the period from the differential equation etc.

103674: The lab sections, while it was useful doing problems, it was difficult to do them for the length of the lab and stay focused.

103761: I feel that the tests were pretty hard in that the questions were easily misinterpreted or that the described situations were a bit unclear leading to incorrect assumptions/calculations etc.

104086: Lecturer was very unclear and came off as very conceited. Lectures were unorganized and I couldn't read the board, even when sitting close to the front. The iClicker quizzes were very vague in that he made them up on the spot and the question was never even written on the board. The lecturer did not make himself available for the students (i.e. holds office hours in Stellas, which is an inappropriate place for many students to gather and ask questions. Also, his responses on Piazza were unhelpful and sometimes rude and overassuming. The textbook was also unclear because if I didn't understand the material presented in lecture (which was frequent), I only had the opportunity to reread what he had just talked about.

104451: It was nice that extra time was given on all of the prelims but I fear that will hurt not only my but everyone's score on the final now that 5 questions have to be done, each in about half the time as was needed during the prelims.

104610: The lecture was presented at a level above my head. I came into the class taking both Matlab and Statics at the same time as dynamics, and it was really tough. That is not the instructors fault, of course, because those are pre requisites. However, once I fell behind, which was almost immediately, I felt smothered by the material and couldn't find enough to keep me afloat- I am very concerned about my grade in the class.

The textbook is not good.

104614: Recitations could have been a little bit more engaging.

104639: no real weaknesses

104657: Textbook was somewhat unclear. Lectures sometimes seemed abstract and confusing. Homework assignments need to have more problems, with individual problems being shorter and more varied (i.e., more short/easy problems to get a better feel for the basics with one or two challenge problems to put everything together), rather than just having a few long problems. As it is now, I felt like the problems were more about figuring out a trick specific to one problem rather than getting a better overall understanding of the relevant concepts and equations. Because of this, I often felt unsure about what direction to go for exam problems. Lab sessions were helpful, but they might be better if they were one hour every 2 weeks instead of 2 hours once every 4 weeks; there was always an unevenness in my understanding of the material because of the current setup.

104748: Professor should hold more office hours himself. I don't like MatLab on tests. In real life, MatLab helps you out with the syntax, which obviously doesn't happen on paper. A MatLab project would be better than "coding" on the exams.
A formula sheet should be given. I think the important part of the class is learning how to apply the concepts, not memorizing the formulas. All other classes with lots of formulas give formula sheets or allow students to create their own. (Statics, Physics, MAE 2120, thermodynamics to name a few)

104839: I think that the pace towards the end of the year was a little too fast. The five-term acceleration formula was gone over pretty quickly and even though it was thoroughly explained, I would have liked to see a few more examples just to get used to using it and thinking through it. Also, it seemed like certain topics such as path coordinates were

gone over very quickly - perhaps this is because they are relatively unimportant, but I don't feel like I have a strong understanding of all the subjects covered late in the course because we were moving so quickly.

104877: MATLAB on exams is terrible. I would rather master the pencil and paper stuff and have exams pique my interest on dynamics problems than try to write up code on an exam.

104907: Grading scheme is very fair but is actually difficult to understand because it's so complicated.

104928: One weakness of this course would be the abundance of matlab in the homework.

104934: Lectures were super interesting but did not always give a clear introduction to the material/ help with learning the content

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105279: The "lab" was not very useful. Would have preferred additional office hours instead.

105330: Some of the homework questions were very difficult, and at the end of the course I was struggling to understand all of the material

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105676: The lectures were fairly vague. I struggled to do some of the homework problems because they involved setting up complicated problems whose concepts we had just barely touched upon in in class. Also, the book was not always helpful because it was also fairly vague about the complex concepts and problems. The examples tend to be easy, simplifications of the homework problems.

105822: Homework sets were very time consuming

105860: Discussion TA was difficult to understand and follow.

105962: Boring, difficult to follow lectures

106021: If the professor wants better iClicker results, he should do away with his "social dynamics" experiments. Showing the iClicker results on the projector in real time inevitably leads to everyone picking the same (not necessarily correct) answer and discourages critical thinking about the question.

I think the role of MATLAB in this course could be clarified a little bit. It seemed to have a large role early on, then was de-emphasized, only to make somewhat of a comeback later on.

106159: I thought that Ruina threw us a curve ball by making 2 out of 3 questions on the first prelim matlab questions. I also feel that in lecture, Ruina often gives examples that are far easier than the homework or prelim questions, and are therefore not very useful.

106236: The exams not being curved is a problem. Although being able to do corrections does help that a bit.

106613: TALK TO THE OTHER MAE PROFESSORS!!! Most of us are taking the same classes, this, Linear Algebra, 2120, and 2250. Stop making us take multiple prelims the same week, or have major projects due when we also have prelims for our other classes. Example 1: The week before prelim 3 we had a prelim for 2120 on Tuesday, our functioning windpump was due on Wednesday for 2250, we had a linear algebra prelim on Thursday, then a 100+ page notebook for our windpump in 2250 due on Sunday, and then prelim 3 for this class on Tuesday. Example 2: we have the final for this class, the final for Linear Algebra, and the final project due for 2250 (including yet another 100+ page notebook) all this Friday. Seriously, please stop. I have been miserable this entire semester, and I know I am not alone.

Professors say that they try to make it so that their tests and projects do not interfere with tests in other classes, but I feel like the mechanical engineering professors did not even pretend to try this semester. Please, before the semester starts, sit down in the same room with a tentative schedule for your class, talk to each other, and try to make it so that everything does not pile up on us at once.

On another note, I was really looking forward to spring break. It had been a miserable semester and I was really looking forward to relaxing with my family and not stressing about anything, if only for a couple of days. Then I saw that you scheduled a prelim two days after spring break ended. This, along with the project Hernandez had due right after spring break, turned what was supposed to be a chance to relax into yet another week of constant anxiety where the only solace was that I did not have class to interrupt the incredible amount of work and studying that I had to do. To make it worse, you also made that test one of the hardest tests I have ever taken. It made me feel guilty for going home to see my family, even though I did a ton of work at home. I felt like I should have stayed in my dorm room where there were absolutely no distractions so that I may have had a chance of passing that test.

Finally, the professor really gears this class towards the top students while a lot of us are struggling at the bottom. It would really help to have tutors available for this class.

106726: I felt that the biggest weakness of this course was the book. I felt that the book was a bit muddled but I did enjoy the tid bits here and there with interesting facts. The notation is also a bit confusing.

106727: The book was very wordy and sometimes hard to follow.

106856: The lecture quizzes were very difficult but they did teach us a lot.

107081: n/a

107130: I felt that the one major weakness was the effectiveness of the section TA. This was not a reflection of her knowledge as an individual, however, but merely a reflection of how well she was prepared for her section.

107171: n/a

107193: If I fail the final, what I said above. Although that's more my fault.

107232: During lecture and recitation, Prof Ruina and the TA wrote super small. It was especially difficult to read the subscripts which are very important in this course. The textbook wasn't great either. There are many errors in the book and the rational in the book was often hard to follow.

107280: There is way too much homework for this class for a three credit course. I spent the most time in this class out of any other class and am still not doing as well in it. The book is also extremely wordy and could be made more concise and organized differently to make it easier to understand. It would also be nice if the problems for each section were after the end of each section rather than at the end of the entire chapter to minimize scrolling on the electronic copy and page flipping on the hard copy.

107288: TA did not know what she was doing. We did not have well structured discussions

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107340: Sometimes, I felt the overall organization could be improved. We would often do a problem of one type, and then jump around to problems of a different kind. I always had trouble understanding exactly what material we were supposed to take out of each lecture and problem we solved.

College of Engineering, Cornell University
Course Evaluation Response Summary
Semester: Spring 2013 Course Owner: MAE
Course: TAM 2030 Lec 1 CID: 11867
Instructor: Ruina
102 Responses, 163 Enrolled, 62.58% Response

107354: Professor Ruina is very intelligent, he knows a lot, but has difficulty organizing this knowledge and transmitting it smoothly to his students.

107361: I didnt't like the exams. They didnt test knowledge well

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107391: More time should be spent explaining how to do ODE's on Matlab

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107478: A huge weakness, I feel, was my TA Huichan Zhao. She is easily one of the worst TAs that I have ever had in my time at Cornell. She was not prepared to teach here as teaching requires a set of skills that lie outside of those taught in engineering classes and she obviously did not have them. I felt like she was an apathetic robot in her classes and a year of assimilation into american culture would have aided her teaching abilities exponentially, rather then throwing her into the classroom after being in the US for only 2 months. That wasn't fair to her students or to her.

107704: I did not like my TA because she seemed very unprepared and was not sure what do during recitation

also, the questions on the exams were very vague and i was unsure about what the problem was asking for. When i was looking at the solutions i saw that i knew how to the problems, but i had misunderstood of what it was looking for

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107727: I think labs should be every week. They were very helpful. I think you can do less MATLAB. Honestly, remove the MATLAB from all these mechE courses (like 2120 and 2030) and instead just make another class called MATLAB Applications to Mechanical Engineering, which would be all about the MATLAB used in mechanical engineering. The policies were almost TOO lenient, but I'm not complaining.

107741: I felt I learned nothing from the lecture. And when that happens in other classes, most times one can make up for that by self-teaching using the textbook. However, it was impossible to do this since Professor Ruina wrote the book. The explanations were the same in both lecture and the text.

College of Engineering, Cornell University
Course Evaluation Response Summary
Semester: Spring 2013 Course Owner: MAE
Course: TAM 2030 Lec 1 CID: 11867
Instructor: Ruina
102 Responses, 163 Enrolled, 62.58% Response

Extra Question # 1 :

MAE gathers mid-semester student feedback in an effort to improve course delivery. Please comment on any changes you observed in this course since mid-semester and whether they improved the effectiveness of the course.

100403: Lectures were definitely improved. But the exams became more difficult

100571: professor listened to feedback from students, less matlab used in course

100630: None

100795: Nothing much.

100809: didn't notice any changes

101790: We did less MATLAB in class. I thought that the amount of MATLAB we did at the beginning of the year was good. I think that we should've continued with it a little bit in the second half of the semester because we were still expected to know how to code, and I felt that spending time on it in class was helpful.

101849: not much

101967: Seemed to get better but was good to begin with

102094: Yes, the instructor took EVERYTHING said on the mid-term course evaluations and attempted to fix problems and make it a better learning experience for students.

102285: there was less matlab during class and more demonstration, which helped

102483: The professor sent out a survey and the students made suggestions, and he made a lot of good changes to the course based on it, which made the course a lot better.

102551: -

102651: None

102811: Didn't notice a difference...

102961: The course could still be more focused - sometimes it's different to tell what I should be taking home from the lectures.

103761: Although I know many people expressed their dislike of MATLAB in lecture I personally found nothing wrong with it and thought it was a good addition to the course material. We have to use it eventually after all. I was a bit disappointed that the professor removed it but at least it showed that he valued the students' opinions.

104166: I observed a decrease in in-class coding, which was an improvement despite the importance of using MATLAB.

104451: Less matlab in the course was an improvement from the first part of the year as I felt like I learned more

during lecture.

104614: Didn't notice a huge change but I liked it from the beginning so no worries

104639: Professor Ruina did less matlab after the first surveys. I actually enjoyed the matlab, but this change was probably for the better since we ended up being a little behind towards the end of the semester.

104748: Less MatLab in lecture and not having homework due on exam days definitely helped!

104877: Less MATLAB on exams, great improvement.

104907: Didn't see any.

104934: Less Matlab in lecture after the midterm evaluation- definitely a good change.

105676: There were no changes to the course.

105822: Less matlab was good because I normally zoned out during that time.

105860: Used less Matlab. Made the class better.

106021: Ruina cut down on the number of MATLAB demonstrations in class, which most of the class, myself included, found confusing and difficult to follow. I find that you can't really learn MATLAB by watching someone else type code in front of you.

106159: I did not notice any changes since mid-semester.

106613: The material got a lot harder and the work began to pile up. I did not notice any difference after the surveys, but at the same time I don't remember requesting any major changes at the time.

106688: Stopped doing so much matlab in class which was exactly what I wanted and it was great. Thanks for listening to what your students want, Ruina.

106726: Lectures got a bit more clear.

106856: There was less matlab than before which allowed us to learn more about the theory.

107081: n/a

107130: No significant changes were noted, however Professor Ruina did pull a bicycle off of a table, and that was pretty zany.

107171: no

107193: Nothing to say.

107232: None.

College of Engineering, Cornell University
Course Evaluation Response Summary
Semester: Spring 2013 Course Owner: MAE
Course: TAM 2030 Lec 1 CID: 11867
Instructor: Ruina
102 Responses, 163 Enrolled, 62.58% Response

107361: None

107478: I see no changes.

107504: Huichan definitely improved in her teaching skills.

107704: yes, i liked that the matlab decreased

107727: I don't know.

College of Engineering, Cornell University
Course Evaluation Response Summary
Semester: Spring 2013 Course Owner: MAE
Course: TAM 2030 Lec 1 CID: 11867
Instructor: Ruina
102 Responses, 163 Enrolled, 62.58% Response

Extra Question # 2 :

Did the four 2-hour long problem sessions help your ability to solve problems in this course, or more generally? Were the problem sessions an efficient use of your time? Why or why not?

100382: I thought that it was a great idea and helped a lot, but it sucked that it was only every three weeks and was like 3 hours long.

100403: Yes. However, as I previously noted, they were too long. I would have preferred an even slightly shorter meeting (even 1.5 hours would have made a big difference). But they were helpful in learning the material. Because they were so long, the last half hour or so everyone was drained.

100571: no, they were a waste of time. they didn't help me.

100630: The problem sessions were somewhat helpful but I found the TA to be of little help. It was difficult to communicate with her and she was often confused. (This TA was not Malika Grayson)

100795: I don't think they were particularly helpful. My style of learning is very front-loaded; I need to assimilate and internalize all the information required to do a test or problem set before doing it. The problem-solving sessions were a breeze if I had already learned what was required; but if not, I considered it a waste of time and just wished I could sit alone and read the textbook instead.

100809: they definitely helped, more personal time with the TAs

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100909: yes they helped me but they were a little too focused on making things neat on the board and not learning equations. otherwise, they were very helpful. far more helpful than a lab would have been

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100980: not really.

101102: not remotely. Total waste of time. TAs failed to properly explain solution after student teams have struggled through work and not achieved the correct answer. TAs also often did not know how to solve the problems themselves

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101457: It helped a lot in understanding what is going on.

101617: No. They were just like doing the homework with other students, which I can do on my own.

101706: No, I thought the problem sessions were redundant with the homework in learning the material. I did not extract much from it, and I felt that they were generally a poor use of time.

101759: I think the problem sessions were and efficient use of my time as they forced me to sit down and think about problems more thoroughly. I think labs would have been much less productive.

(Varun was my TA)

101790: The problem sessons were not a good use of my time. I liked that we were given practice prelim questions to take home, but I did not feel that I learned much from the problem sessions. I thought that the time would've been better spent studying on my own. I did not feel that working on problems at the board for two hours enhanced my grasp of the subject matter.

101849: Yes actually they prepared for prelims well.

101967: I didn't think it was useful. Much rather spend the time doing the homework on my own. The TA was fine don't get me wrong and was helpful and teaching concepts. Also kinda dragged on.

102012: They especially helped as they were scheduled on the same days as the prelims

102094: Yes, very efficient working out problems with peers and a TA there to assist you.

102171: I think the problem sessions should be more frequent, but for only 1 hour. Every session, it really felt like they dragged on. If I had already done the homework, the two hours was way too long. If I hadn't already done the homework, then I would rather go to office hours than do it at the problem sessions.

102258: Yes

102285: not really, they were just like the discussion except longer and there would be repeat material sometimes.

102483: Yes, it was very helpful to solve a problem completely and one that was more difficult than the ones done in lecture.

102544: Yes very good.

102551: Yes.

102651: Yes. It helped me understand the material

102805: Yes, they helped serve as a reality check as to whether you can solve problems on your own.

102811: Yes, they definitely helped. The problems were relevant and being able to bounce ideas off of fellow students and ask a TA for guidance proved very effective.

102928: The problem sessions were great. Working on the board with a partner and seeing the work of others helped me understand several concepts. These sessions also taught me how to better organize my work, which was awesome.

102961: Yes, they were helpful especially in learning how to set up and approach the homework problems.

103073: I didnt find the problem solving sessions helpful. The focus seemed to be on organization and presentation of problems which I didnt feel like I needed any help with. I just felt like they were an inefficient use of my time. If I was working on homework then I would just have to do it again later since I couldnt write it down. The problem sessions were most helpful when it was right before a prelim because it allowed me to study with another person and the TA was able to help if needed.

103444: Yes, I really liked them and even went to the weekend ones to get extra help because they were so helpful.

103674: It helped my ability to solve problems and made me better at thinking in terms of dynamics. The 2-hour length was a little long as it was difficult to find motivation to work for that long.

103761: The sessions were alright. I just don't like having to use the blackboard as I like to be able to write everything down and become totally absorbed in a problem whereas on the blackboard its a little hard to concentrate although I understand why they were used.

Also - they were a bit too long to keep me engaged for the whole time.

103787: Yeah, it made sure I could do stuff without notes

104086: Yes

104166: Yes and yes, they were more effective than traditional labs.

104213: It is bad that they have to be part of the scheduling on studentcenter. I did not find them particularly helpful, but I can see what you were trying to do.

104451: Yes they were very good study tools for the tests since mine always occurred the Friday before the tests. I feel like they would not have been as helpful if they had not fallen at these times.

104608: Yes they were actually a lot more helpful than I thought they would be

104610: Yes, these were very useful.

104614: Yes. Helped enforce knowledge of Dynamics, and improved my presentation/organization skills. TA was helpful and encouraged both independent thought and collaboration.

104639: I think the problem session were helpful. It was good seeing how other students solve problems which I think helped my problem solving abilities.

104657: They were very helpful for going through problems step by step.

104748: I felt that the first problem we solved was helpful, but after that it got boring. Maybe a wider variety in selection of problems?

104839: I will admit that I did not enjoy the"lab" sessions because it was 2 hours occupied in class that I was used to having free for other things. However, I did think they were actually useful. Having to methodically write out a difficult problem and having peers to think it through with was helpful to my understanding of the material.

104877: Yes. Very helpful; good hands-on approach.

104907: Yes. They were extremely helpful.

104934: Yes- definitely helped in the learning of how to solve questions. Forced you to take more time to solve the problem well.

105330: They were very useful but it would be better to have a shorter weekly meeting.

105337: Yes, I believe they were helpful in working through problems. It is helpful to work with other people when working through a problem.

105676: The four long problem sessions did not help with my ability to solve problems. The problems picked tended to be fairly easy, with one exception where the entire class spent about an hour trying to figure a problem out and could not get the answer.

105822: Yes, they were a bit long. I would have preferred having more problem sessions

105860: Gave better insight into working through problems. Very helpful. A little long.

105962: They were useful because they forced students to work together to solve problmes

105972: very helpful

106021: They guaranteed me individual attention while working on problems. They helped me organize my ideas clearly and form a better understanding of the problems. Doing the problems with a partner on the blackboard is a good exercise.

106159: The labs were useful in my opinion. It was nice to be able to get help on whatever homework problems I was having trouble with.

106236: They helped a lot, however the 4 week timing was poor because I felt as if I didn't get any help with the hardest material at the end, and only with the easy material at the beginning.

106613: I liked them. It was nice doing the problem while there was someone there to help us out, instead of just watching a lecturer do the problem.

106688: I thought the problem sessions were useful probably because my session always fell on the same week of the prelim so I always came prepared and with questions. It served as a mandatory office hour sort of.

106704: They were incredibly useful. I just hated going to them

106726: Yes, they were very helpful because it allowed me to gain someone else's insight into the material. A lot of the times the other person would have a shorter or better way of doing the problem than I would have done so this was very helpful.

106727: Yes, they were an efficient use of my time. It was also nice that there was so much flexibility in the schedule.

106798: Yes, they were extremely helpful

106856: Yes they really helped because the TA was able to explain concepts that we did not know.

107081: n/a

107130: Generally, these sessions were more troublesome than not, largely due to their infrequent nature, which led to more confusion and I actually missed one of them because of this.

107171: Yes, they were very helpful developing a grasp of the material

107193: I would tell you, but I never went after the first one.

107232: They were actually extremely helpful. Much more so than lecture or recitation. It was helpful to work with another student and to have a TA help you work through the problems.

107280: Yes, see strengths above.

107288: Yes, but no they were not useful. I wish we do these things in discussion

107340: They tremendously improved my ability to solve problems. They didn't always seem the most efficient while in the lab because we would often only solve 2 or 3 problems fully. But looking back, the ability to convince someone else of every step in solving a problem was more valuable than the possibility of attempting a large volume of problems we could have blown through and not understood as well.

107354: A little bit, but generally not really. It is better than having to spend time writing up reports and whatnot, but still, it was kind of annoying having to spend 2 hours working on problems that we already do for homework.

107361: Not really. They cleared some stuff up but they were the same a srecitation.

107391: No, they went over homework problems that I had already done.

107478: I think that these could have been helpful; however, my TA for them was the same as my recitation TA and I have already mentioned my qualms with her teaching abilities.

107504: Yes, to be able to just go through one problem with total guidance is a great asset. Would do again.

107593: They were very helpful. I always had them the day before a prelim and it was so helpful to study with other people and have a TA there to help out.

107704: yes they were very helpful. maybe we can decrease the time to 1 hour instead of 2 though, the problems were somewhat repetitive

107727: Absolutely. Very effective and I learned a lot.

College of Engineering, Cornell University
Course Evaluation Response Summary
Semester: Spring 2013 Course Owner: MAE
Course: TAM 2030 Lec 1 CID: 11867
Instructor: Ruina
102 Responses, 163 Enrolled, 62.58% Response

Extra Question # 3 :

How could the problem sessions be improved?

100382: I thought that the labs should be once a week and one hour rather than once every three weeks and two and a half hours. They were very helpful, but only for the weeks that you had them. Plus, everyone was sick of standing and writing on a chalkboard after 2 straight hours of doing it.

100403: Just a bit shorter.

100571: the TA couldn't answer all my questions

100630: Perhaps print out the problems that we have to solve during that session and train TAs to communicate with students more effectively.

100795: I think it would help to build up momentum/self esteem with a few quick easy problems, and build up from there.

100809: i actually didn't like doing work on the blackboard

100909: some work on paper too

101102: Removed entirely, preferably. Otherwise, reduce length of session and have them more often. It was very easy to forget on which weeks your session would meet

101457: Shorter but at more frequent. Almost like recitation but needs to be longer and more problem solving than the recitation

101617: I don't know.

101759: The questions posed could be more in-depth than ordinary homework problems.

101790: We should have shorter problem sessions . Also, problems should be gone over as a class after we work on them in pairs. Sometimes we didn't completely review the problems. The problem sessions really aren't necessary.

101849: not sure

101967: Shorter, or not at all

102171: Make them shorter and more frequent.

102285: I think instead of discussion you had these problem session a little more frequently it would help more because I think these problem session were at least more useful than the discussions

102544: they are already good

102551: -

102651: Too long and too infrequent. Do it every week for an hour

102805: A slightly longer break (10 min instead of 5, for example).

102811: I thought they were very effective!

102928: Pizza/assorted snacks.

102961: The problem sessions can be improved by having more problems "on deck" for groups that finish early.

103444: I had 3 different TAs for the problem sessions and the quality of them largely depends upon the TA. Sometimes the TAs waited until the end of the session to go through certain things, but I prefer when they answer questions at the time. Also some people are chalk hogs and it can be hard to participate when they don't want to share ideas or listen. I don't know how you would improve this, but it was kind of annoying.

103674: If you shortened them they would be more useful and more efficient.

103761: Make them shorter perhaps - do more interesting problems.

104086: Shorter?

104213: They should be somehow merge with the recitation section, I think.
Perhaps make every 4th recitation a Problem session somehow?

104451: Have set problems the TAs were supposed to go over since it seemed like each TA could do what they wanted.

104610: Matt Kelly spent too much time with one group and did not spread his time evenly. I think its silly that we cant take five minutes to write down the problem from the blackboard once we have finished it.

104614: They were great, I have no comments.

104639: From what I heard from other students, there was a lot of variance between the what TAs did in the sessions. Some did homework problems and others weren't organized.

104657: Make them shorter and more frequent (maybe 1 hr every 2 weeks instead of 2 hrs every 4 weeks). It felt like my knowledge of the material was inconsistent because of the timing of the labs; I understood certain topics much better after they were covered in lab, but since they were so infrequent there were gaps where I didn't understand the material as well.

104748: Wider variety of selection of problems. Cover problems from multiple weeks, not just the week of the recitation.

104839: Giving each session a unified goal would be helpful. For example, we had one where we did problems related to polar coordinates. It would have been helpful to know explicitly what the focus of the session was and what I should have been taking away from it.

104877: They're fine.

104907: They can't.

104934: Have the sessions every week for a shorter time

105330: have it weekly

105676: The problem sessions could be improved by created worksheets for the students to fill out, or at least by having the students turn the work in. This would provide greater feedback on the student's understanding of the problems.

105822: Have it once a week for a shorter period of time

106159: My problem session was great, but I heard in other problem sessions that they were not allowed to chose what homework problems to do, and that sometimes they did random problems instead of homework problems. I believe the way my problem sessions were run were the best: for everyone to be able to chose a homework problem they needed help on and solve it on the boards.

106236: They cool be staggered more or made lnger.

106613: Make them more frequent, but not 2 hours long.

106688: Could be a little more structured. Give us problems that are difficult alone but easier to work out in pairs.

106704: If problem sessions were more about right answers than pretty work

106726: I feel that the problems sessions could be made about 30 minutes shorter but overall I feel that they were well planned out.

106727: Don't use homework/prelim questions in the problem sessions.

106856: Have them more often.

107081: n/a

107130: By including a more visual demonstration of principal, much like is done during the lectures.

107171: n/a

107193: Make them mandatory, like real labs.

107232: They were great.

107280: I would like to go through more smaller problems that test the basic concepts first and then do one giant problem rather than several large problems. Since there is so much homework in this class (if I did all the homework problems to their fullest I would never be able to finish certain problem sets), doing homework problems in these sections would be nice.

107288: they are good

107340: I liked how they were always the day before a prelim for me! I bet everyone could have used that to their

advantage.

107361: Do a lab.

107478: For me personally, a better TA.

107704: make them shorter

107727: Have more of them.

College of Engineering, Cornell University
Course Evaluation Response Summary
Semester: Spring 2013 Course Owner: MAE
Course: TAM 2030 Lec 1 CID: 11867
Instructor: Ruina
102 Responses, 163 Enrolled, 62.58% Response

Extra Question # 4 :

Would you recommend 2030 keep these problem sessions, revert back to a physical lab (like 2020), or use a mix of labs and problem sessions. Please elaborate.

100382: Yes, definitely keep them as problem sessions. The physical labs in 2020 were just a pain in the ass and taught you very little.

100403: A mix of the two may be too much. I did not see a need for physical labs. Overall, I found the problems sessions to be very helpful but just too long.

100571: physical labs, i can solve problems on my own

100630: Keep the problem sessions, just improve them.

100795: A mix might work. A physical lab while learning conceptually challenging, and a problem-solving session to compliment more mathematically subtle problems.

100809: yes keep them, no reverting back

100909: keep problem sessions, they helped me a lot with exams and homework!

100980: mix of labs and problem sessions would be better.

101102: physical lab, without a doubt. Problem sessions were a waste of time. More knowledge could have been gained from simply looking at textbook examples or homework solutions

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101457: Keep these but shorten it and make it more frequent.

101617: I really don't know. The problem sessions weren't helpful, but I have no way of knowing if the labs would have been.

101706: I believe that seeing physical scenarios will help us grasp material and a physical lab section with demonstrations will be a much better use of the lab time.

101759: Just problem sessions.

The demos in class (and that could be done at home) lend enough intuition about the subject that labs would just be a waste of time.

101790: I thin that the problem sessions are better than a physical lab, but I do not think they are needed at all.

101849: problem sessions would be nice

101967: I don't know, I don't really like either too much

102012: Perhaps same format with physical demonstrations like in lecture

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102094: Keep these lab sessions. Physical Labs are so tedious.

102171: Keep them as problem sessions.

102258: Yes

102285: keep the problem sessions

102483: I would recommend that 2030 keep the problem sessions. They really helped me understand how to solve dynamics problems after being introduced to the concepts in lecture.

102544: keep problem sessions.

102551: Keep problem sessions as they are. It was very valuable for me to work on problems.

102651: Problem sessions. They help with understanding the material. Physics labs would not emphasize this.

102805: I recommend they keep the sessions; they help improve understanding of the material more than just demonstrating a physical example in a lab and making students write a report.

102811: Keep the problem sessions- it was very helpful to be able to work with students and TA's on relevant problems. Many times physical labs, although fun and interesting, do not teach nearly as much.

102928: I think a mix could be good. If the physical labs were informative and not simply there to fill time then that would be awesome. I did, however, quite enjoy the problem-solving sessions, and feel that even if I didn't learn that much material-wise from them, I definitely learned how to better organize my work and think about how to reach a solution given certain initial information.

102961: I would prefer the problem sessions, but with a heavier use of demos in lectures and recitations.

103073: I think the best would be to do a mix of labs and problem solving sessions. I dont know how you would work it out but if you could set it up to have problem solving sessions before prelims to help with studying and labs otherwise I think that would be the most helpful/useful use of my time.

103444: Definitely keep as problem sessions. I felt 2020 labs were completely useless and boring. Ruina does enough demonstrations in class that I don't feel like I need to repeat them outside of that setting.

103674: Possibly use a mix of labs and problem sessions, as the labs would be interesting, and the problem sessions would improve our ability to solve problems. Maybe making each session have a small lab and a small problem solving session would make sense.

103761: A mix would be interesting - physical labs at times feel automatic as everyone knows what to expect but they are still good for seeing how things progress in a course but the problem sessions could also be used to break up the monotony of automaticity

103787: Mix, just so that there's something more exciting, but i guess that depends on what the labs entail

104086: Keep the problem sessions and do not have physical labs.

104166: Yes, keep the problem sessions. They vastly improved my problem solving skills, and physical labs are often

lost on the final exam.

104213: Labs would have just been a waste of time, so these are better than physical labs.
The demos in class are more than sufficient for "lab" material.

104404: Keep the problem sessions. They are more useful than a physical lab because labs just introduce complications that don't factor into what we actually need to know. Problem sessions are ways to actually work through problems thoroughly

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104451: I like the problem sessions, I thought the labs in 2020 were slightly useless and that I could have learned just as much from them if I was shown a 5 min video in class of each experiment.

104608: Nah

104610: keep them. adding lab would be too much for a 3 credit class

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104614: Keep the sessions. They were useful and engaging.

104639: I think the problem sessions were good, especially since professor ruina did a lot of demos in lecture.

104657: The demos in lecture were sufficient for seeing how the concepts physically worked. As such, I think the problem sessions are a better use of time than physical labs. Also, the physical concepts themselves are not as difficult to understand; what made the course difficult was the setup and math involved in actually solving the problems, which a physical lab would not help as much.

104748: Problem Sessions are better. I feel like with actual labs the focus is on the lab report, and I don't learn much. I prefer the labs being done in lecture, where I can learn from them without worrying about writing up a paper.

104839: I would recommend keeping the problem sessions. In my experience, labs are not usually that useful because everything is so controlled, given to you in such a way that you produce a certain result at the cost of actually thinking through things and learning. I would rather spend my time in problem sessions thinking through things than spending it writing up a lab report.

104877: Keep the problem sessions and forget the physical labs. I don't think anyone learns much from physical labs. Let the physical aspect be shown in class demos and videos of demos.

104907: Keep the sessions. They help so much with understanding.

104928: I prefer the problem solving sessions.

104934: Keep the sessions but have them every week to keep up with the content

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105330: the problem sessions were much more useful

105337: I believe these problem sessions are more likely to be useful to future students. I am not sure what labs were used previously but I feel I learn much less during traditional labs than by solving problems.

105676: I would suggest a mix of labs and problem sessions. The problem session were good, but physical labs have always helped me to understand the concepts better. After running an experiment and actually watching what happens

and analyzing the results, I usually am able to apply that knowledge to other paper and pencil problems better.

105822: Yes I learned a lot from the problem sessions

105860: Keep the problem sessions. Helped me understand the material better.

105962: Keep the problem sessions, they are very helpful

105972: problem sessions are best

106021: Keep the problem solving sessions.

106159: Keep the problem sessions, don't have physical labs. I found the physical labs in 2020 very annoying

106236: Keep the problem solving sessions as they help with actual knowledge of the material. 2020 labs just illustrated things we knew, and hardly enhanced my learning.

106613: 2250 has taught me that labs are evil and I want nothing to do with them. The main reason lab reports. These suck all interest out of the material by turning it into busy work that must be formated absolutely perfectly so in the end, you end up worrying about that instead of learning the actual material. Also, I think the problem sessions are helpful so please don't get rid of them.

106688: keep the problem sessions! as cool as it is to see the theory of what you are learning in practice, the problem solving sessions are actually a useful tool for learning the theory which is what the class is all about in the end of the day.

106704: No labs are rarely useful in my opinion and take much more time than the problem sessions

106726: I would recommend 2030 problem sessions. I believe that physical labs are useful (2020 labs did nothing to help me understand the material, I felt it was mostly mundane busy work)

106727: Do not revert back to lab! Keep the problem solving sessions!

106856: Keep the problem sessions. In physical labs, we do not really learn the material. In 2020, we were not prepared to analyze the data so the TA had to show us step by step so we just copied down what he did. The lab write-ups are tedious and you do not really learn much from doing them.

107081: n/a

107130: I would personally reccomend that the course switch back to physical labs, mainly due to the more hands on approach that would be taken. Either that, or make the problem sessions a more hands on type of experience.

107171: Problem sessions- you do problems applicable and learn how to do the problems correctly with a ta closely watching over and helping

107193: The problem sessions are way more helpful than labs, since they work like extra discussions. In most other low-level classes, labs are just there so it looks like you can do something (arguably) practical with what you've learned, which doesn't help learn the material.

College of Engineering, Cornell University
Course Evaluation Response Summary
Semester: Spring 2013 Course Owner: MAE
Course: TAM 2030 Lec 1 CID: 11867
Instructor: Ruina
102 Responses, 163 Enrolled, 62.58% Response

107232: Keep the problem sessions! Physical labs would be much less helpful in learning the course material, and problem sessions were very, very helpful in learning.

107280: Keep it how it is.

107288: mix of both, I think doing physical labs would help me understand what was going on better

107340: Keep the problem sessions!!! I found the labs in 2020 not very useful and the write-ups were agonizing. These sessions actually interested and engaged me and helped me perform better in the course.

107354: How about a mix of lab and problem sessions. Why not, have a lab where someone does an experiment, and then the students have to use the boards and whatnot to write out the equations of motion and whatnot for the experiment and whatever happened. You could have a yo-yo experiment where the TA uses a yo-yo for example and then have students try to figure out how it works and why it works the way it does.

107356: Problem Sessions.

107361: like 2020

107391: A physical lab would be more useful for practice knowledge.

107478: I would recommend keeping the labs as is; however, the screening of TAs for those that run the labs needs to be more intensive.

107504: Keep it the way it is.

107593: Yes I liked the problem solving sessions because they helped me to actually get problems done with a TA and with other classmates. Its very different than a recitation and I found it very helpful.

107704: i did not like the reports required for 2020 and the problem sessions are helpful to supplement my understanding, but it would be nice to do occasional physical labs.

107727: Have the sessions every week and also have occassional physical labs. I think labs would be cool.