**College of Engineering, Cornell University**
**Course Evaluation Response Summary**
**Semester: Fall 2013 Course Owner: MAE**
**Course: MAE 5730 Lec 1 CID: 13074**
**Instructor: Ruina**
**25 Responses, 36 Enrolled, 69.44% Response**

| Question | Mean | Count | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| 1. How valuable were the assigned readings? 1=taught me little; 5=extremely educational | 3.64 | 22 | 0 | 2 | 6 | 12 | 2 |
| 2. How valuable were the homework and/or computer assignments? 1=taught me little; 5=extremely educational | 4.08 | 25 | 1 | 0 | 4 | 11 | 9 |
| 3. How valuable were the laboratories? 1=taught me little; 5=extremely educational | 3.00 | 2 | 0 | 0 | 2 | 0 | 0 |
| 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 | 3.40 | 25 | 0 | 2 | 13 | 8 | 2 |
| 5. Did the lecturer stimulate your interest in the subject? 1=not at all; 5=stimulated great interest, inspired independent effort | 3.92 | 25 | 1 | 1 | 6 | 8 | 9 |
| 6. Was the lecture presentation organized and clear? 1=disorganized and unclear; 5=very organized and lucid | 4.08 | 25 | 0 | 1 | 6 | 8 | 10 |
| 7. Was the lecturer willing and able to help you overcome difficulties? 1=was of no help; 5=was very helpful | 3.83 | 24 | 0 | 2 | 7 | 8 | 7 |
| 8. Rate the overall teaching effectiveness of your lecturer compared to others at Cornell. 1=worse than average; 5=much better than average | 4.16 | 25 | 1 | 0 | 5 | 7 | 12 |
| 9. Was the recitation organized and clear? 1=not at all; 5=very organized, lucid | 4.60 | 5 | 0 | 0 | 1 | 0 | 4 |
| 10. Was the recitation instructor willing and available to help you overcome difficulties? 1=was of no help; 5=was very helpful | 4.29 | 7 | 0 | 0 | 2 | 1 | 4 |
| 11. How would you rate the recitation instructor's command of the course material? 1=poor command of material; 5=excellent command of material | 4.44 | 9 | 0 | 0 | 2 | 1 | 6 |
| 12. What was the overall quality of the recitations and your recitation instructor? 1=worse than average; 5=much better than average | 4.25 | 8 | 0 | 0 | 1 | 4 | 3 |
| 13. Overall, how does course compare with other technical courses you've taken at Cornell? 1=poorly, not educational; 5=excellently, extremely educational | 4.04 | 24 | 0 | 1 | 4 | 12 | 7 |
| 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 | 3.68 | 25 | 0 | 2 | 8 | 11 | 4 |
| 15. How prepared were you for this course? 1=overprepared, it repeated material; 5=underprepared, course assumed unfamiliar knowledge | 3.04 | 25 | 0 | 8 | 9 | 7 | 1 |
| 16. Was the code of academic integrity maintained in this course? 1=no, often violated; 5=yes, well maintained | 4.68 | 25 | 0 | 0 | 3 | 2 | 20 |
| 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 | -- | 25 | 0 | 7 | 16 | 1 | 1 |

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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.

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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).**

110530: Lectures were clear and well organized.

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111463: Nice computer assignments that demonstrate the power of the concepts taught in class.

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111645: - Pacing was very conservative, and this was refreshing. Rather than learn a ton of material very poorly, I feel like we learned a smaller set of things much more thoroughly. I think I'll remember more in the future.
- Instructor was good at answering questions and good at finding out if we didn't get something.
- Matlab is an incredibly valuable skill. I learned a lot.
- I liked the textbooks. I would rather not have two, but they were pretty good choices.
- Great online resources.

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112544: The lectures were always very clear and well-sequenced. I appreciated the fact that the exams didn't have a hard time limit but were instead more flexible -- it really relieves pressure to know that you don't have to rush against the clock.

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113518: Most lectures were very good. HW assignments are effective. TA Adam is an asset.

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114450: Lectures were very organized and easy to follow. Doing examples in class were very helpful in learning the material.

Occasional story or joke was good to get the class engaged. Also communication with students was very good.

Piazza help from the instructor and TA were helpful. Very quick response times.

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114939: Tests were a fair representation of the course material. The material covered by the final project was cool.

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115247: Lecture was wonderful, Ruina is the man! I have learned a lot about all the different tools to solve dynamics problems. MATLAB is much less of a mystery to me -- the symbolic toolbox is probably the greatest thing ever. Exams were extremely fair in the evaluation of our knowledge. The text was helpful as well (R.P.). Thank you for a great semester!

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115250: Professor Ruina and the TA Adam had a very good command of the material. The subject matter was also interesting.

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115294: Lecture is really clear and effective.

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115445: Really like learning how to use a computer to solve dynamics problems. I feel much more confident in MATLAB now.

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115633: Ruina clearly is a master of the material. Unfortunately, his ability to disseminate his knowledge to his class is limited.

The class is also disturbingly unstuctured. Ruina has a unique philosophy on grades, but it does not reward hard work.

Ruina is also too fundamentalist in his approach on Dynamics. As an engineer, I don't give a damn about deriving all the equations from F = ma or Lagrange. I just want to be able to model and simulate complex dynamical systems. I felt like the lectures were more of a philosophy or theoretical mechanics class than a mechanical engineering class. This gave the course a very useless feel.

And indeed, the course felt useless overall. I cannot think of any circumstances where I'd solve for the impossibly precise initial conditions in real life that would allow bodies to rotate in figure 8 patterns. Ruina should attempt to relate the course material to reality more often, otherwise students will feel disconnected and uncompelled to learn the material.

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116716: I thought the homeworks were relevant to what we were doing in class. I like that we can redo the homeworks and recieve 100%. It allowed me to learn without having to stress over getting things wrong.

Homeworks were really long sometimes. But Andy cooperated with his students fully when we felt overwhelmed.

Lecture was interesting and entertaining. I enjoyed waking up to go to this class.

Although I had to struggle with using Matlab for homework, looking back on it now, it was always a reasonable amount of coding. Andy did a good job of teaching me the basics in the beginning of the semester, as I have never used Matlab for dynamics problems before.

Although long,the final project was kind of fun to do and helped me learn about the foundation of this course as well as how to animate dynamical systems.

Exams were fair enough and closely related to the homeworks. And just like we can redo the homeworks, I like that we got a second chance to redo the tests for some points back.

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117141: Ruina is an excellent teacher. Overall the lectures move at an excellent pace and provide a good blend of concepts and examples. (Note: towards the end of the semester lectures were a bit rushed to fit in material).

I liked the focus are setting up numerical simulations with MATLAB. I believe this is a useful skill that will translate well to other courses as well as professional work.

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117814: The homeworks were a good way of understanding the course material.

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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).**

110530: Readings for lectures were not posted before the lecture. This would have been helpful.

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110636: The workload was a little much, especially considering the high frequency of rather long/meticulous problem sets

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111645: - Personally, I really like at least 10 days to work on a homework assignment and at least 3-4 weeks to plan for a project. Nothing was unreasonable per se, but sometimes 6 days seemed a little short to complete work when other coursework also happened to align.

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112544: I wish that we spent less time on the simple 1-D oscillators that most of us have seen many times before and instead spent more time on more complicated oscillations like multi-DoF oscillators and structural vibrations.

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114450: Homework rule written syllabus was violated a couple of times. Some weeks (earlier in the semester) it was a bit unpredictable as to when homework would be assigned. Also one week there was no homework, but the following week had double the load. I would rather have had equal loads on both weeks.

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114939: Homework assignments could have been more even in length/difficulty. Tests should have had more of a time constraint - I understand the desire to have unlimited time, though in real life you don't have all day to do things. Also, a small (like index card sized) cheat sheet would have been nice, as I felt like there were some equations that I would have liked. Lastly, the workload at the end got a little unwieldy - two homework assignments, a project, and an exam? You can't really expect us to learn all of that.

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115247: The classroom the course was taught in was not ideal. A room with stadium seating (different levels) probably would have been better.

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115250: Some of the homework assignments were quite "strange" and did not always relate to the exams.

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115294: Sometimes I want to see more examples on the materials. It's not clear to me sometimes how I can use the new material in problems.
If we can have a comparison on old equations versus new equations and how they are different from each other that will be great.

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115445: Sometimes over open ended answers to questions can be frustrating when your already really confused on whats going on.

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115633: Although Ruina's grading system was one of my complaints, I got to give the man some credit for implementing such a unique and philosophically-rooted policy.

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116716: Lecture can only be improved by more Matlab examples. My biased opinion says that I would have had a less stressful time learning Matlab if I saw more examples in class.

As mentioned above the project was fun, but long. I thought the final project was a little long given the time of the semester in which it was given to us (right around Thanksgiving break with one week of classes left). I would have liked more office hours for project help. I found myself constantly asking questions on piazza and waiting around for a few hours for an answer that did not really help me that much.

I think there needs to be more disclosure on the content of the exams. On Exam 2 there was a question from

something we did in week 3. I actually got 21/25 points for that question but I had to search the depths of my mind to recall the solution.

In regards to that question above, I think the grading of the exams can be a little less harsh. In the example above in which I received a 21/25, I felt that I did the entire question right and lost 4 points for something as simple as finding the radius of a circle. I get that it is a big deal that I did not complete the problem as expected, but I felt wronged in getting an 84% on that question for doing all of the dynamics correctly and missing one geometry step. And the worst part was that I could not even do the problem over to get points back because my grade was above a 20/25.

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117141: The time required for this class is absurdly disproportionate to other classes. The professor tries to inspire students to look beyond the assigned problems and explore dynamics for the joy of learning. This proves difficult when 20+ hours per week are required merely to complete the base assignments. It becomes a struggle simply to complete numerous problems that are sometimes redundant, rather than spending time to explore problems of interest.

I was not pleased with the way all of our homeworks are being graded at the end of the course. I understand and respect the intent to avoid students chasing grades by not emphasizing homework grades throughout the semester. However, asking students to concentrate time during finals week to grade a semester's worth of work is inconsiderate to students that have other exams to study for during this time. On that note, I believe that it would be preferable to have either a final project or a final exam during exam week, but not both.

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117800: Matlab Strategies and helpful function suggestions for assignments.

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117814: More examples would have been nice for me personally where we at least entirely set up the problem (prepare the matrices required for ODE, writing out all the moments, etc.) Many times problems would only be briefly discussed before moving on.

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112544: I didn't notice anything, but I honestly haven't paid too much attention.

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116716: I did not notice any significant changes from mid-semester. But I thought this course was really good from week 1. I would change everything I mentioned in the weaknesses section.

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117141: None

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117814: Not about the mid-semester feedback, but about possible future implementations: More emphasis on problem solving, perhaps a larger matlab implementation intro, and perhaps some dedicated lectures on root finding

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