Remember Aunt Ada and her Epic Tree House?! The overarching goal of Project 1 was to have students explore the use of computational stress analysis, specifically finite element analysis, in ensuring the integrity of a structural design. However, there was a separate goal in this project.

Professor Webb is exploring the notion of incorporating **entrepreneurial-minded learning** into courses taught under the mechanical engineering curriculum. What is entrepreneurial-minded learning? Well, quite honestly, while we have good notions of what that means, it also remains somewhat open to interpretation. Lehigh University is fortunate to have been invited to join a collection of ~25 universities dedicated to defining what entrepreneurial-minded learning means and using it to transform undergraduate engineering education. Our goal is to drastically improve engineering curricula to manifest students who approach every problem they encounter with a toolkit that encompasses not only well-retained core technical skills but also an absolute dedication to the advancement of humankind. You should realize what being an undergraduate engineering student at this institution means about you: you simply would not be here if you were not a person with the potential to become a world-class engineer who advances transformative solutions to society’s problems. You honestly have the potential to – dare I say it – change the world!

So now I need your help.

The cadre of educational institutions that Lehigh was invited to join is known as KEEN – the Kern Entrepreneurial Engineering Network. You can easily find your way to KEEN’s website and learn more about their goals and philosophy. To very briefly summarize, KEEN has established what it believes to be the three basic tenets of entrepreneurial-minded learning and they are the three Cs:

***Curiosity*** – all engineers should be curious about our changing world and we seek to foster this curiosity; however, we also want to help you become an engineer who explores contrarian views of accepted solutions.

***Connections*** – we want to help students understand how to integrate information from many sources to gain deeper insight; intrinsic to this, we hope to educate engineers who expertly assess and manage risk since risk often manifests as a result of unexpected connections.

***Creating Value*** – if you have the ability to identify unexpected opportunities to create extraordinary value we know, with near certainty, that you will lead a fruitful and deeply satisfying life. To do this, you must develop an ability to persist through – indeed to learn from – failure and its associated consequences.

Considering these three Cs, I would really appreciate if you would tell me how effective was Project 1 in achieving the educational goals I describe above. ***To complete this part of the Project 1 review, you should send me an email with your thoughts. In doing so, please tell me any ideas you have for making the project (and the class in general) more successful at instilling notions of the three Cs. In your opinion, what educational techniques have the greatest potential to create engineers who, through a vigilant demand to see how their educational preparation and their future work connect to the bigger picture, truly change the world.***

The second part of the Project 1 review is a bit more like what you’ve seen in the past! Please fill this out and bring it with you to the final exam. ***Please put your name at the top!***

How helpful was each of the following to the development of your computational tool and final report?

1a – Design Consideration Brainstorm

Not Helpful 1 2 3 4 5 Very Helpful

1b – Most Important Criteria (Team Report)

1 2 3 4 5

1c – Pseudo Code / Algorithm

1 2 3 4 5

1d – Design Proposals (Team Report/Designs)

1 2 3 4 5

Did you think “Aunt Ada” gave too much or too little direction during Project 1?

Too Little 1 2 3 4 5 Too Much

Did the use of a “client” help you engage in Project 1?

Not at All 1 2 3 4 5 Definitely!

Did you find the scenario to be a useful and illustrative application of 1D FEA?

Not at All 1 2 3 4 5 Very Useful

Is there anything you would add or remove from the project and, if so, what? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Any other comments or suggestions for Project 1 or projects in the course, in general? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_