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ENEE200, section 0101

TA: Akilesh Praveen

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Dear President Pines,

I hope you're doing well, staying safe and healthy! I am writing to you on behalf of the students of Dr. Mogul's Engineering Ethics class (ENEE200). As I conclude my sophomore year at UMD as a double major in Computer Science and Economics, I reflect on my experiences in the classroom so far.

According to a report released by the National Academy of Engineering, "Ethical practice in engineering is critical for ensuring public trust in the field and in its practitioners, especially as engineers increasingly tackle international and socially complex problems that combine technical and ethical challenges."

A big part of what we learned in ENEE200 focused on how engineers can be trained to be better at making ethically responsible decisions and how an important step to having ethically responsible engineers in the workplace is including ethics in engineering education. Although courses like ENEE200 are a really great way for students to get exposed to ethical issues in engineering, in order to really get UMD students prepared for being ethical engineers in the real world, the engineering school should work to integrate ethics into the entire engineering curriculum.

Like I said before, a theoretical and analysis based course like ENEE200 allows students to gain an understanding of the kinds of ethical scenarios they may face when they join the workforce, however this course alone is not enough to ensure that engineers leaving the UMD engineering program are prepared to act properly in the future when they encounter situations that require ethical decision-making. In Chapter 7 of *The Ethical Engineer: Contemporary Concepts and Cases*, Robert McGinn explains Louis Bucciarelli's critique of ethics education in U.S. Engineering schools. One of the main arguments Bucciarelli makes is that engineering in practice has a lot more of a social aspect, which is something that engineering students only encounter when they actually start working. Bucciarelli explains how many of the ethical cases students study focus on individual responsibility that engineers have to ensure engineering mistakes don't result in catastrophes. Thus far, I have noticed that Bucciarelli's critique applies to much of the engineering and science education experiences that I've had so far at UMD. One way that UMD's engineering curriculum could be changed to ensure that students have a more realistic understanding of expectations for engineers in the workplace is to introduce more focus

on social aspects of engineering, group work, good communication and collaboration. Although some of the classes that I have taken so far have involved group work, I think there has not been a lot of involvement from my professors in order to ensure that students understand what kind of expectations exist when it comes to working in a group setting. I think that this is one of the main reasons why many students do not enjoy working on group projects and often complain how they struggle with getting their teammates to successfully collaborate on a group project. Encouraging professors to make changes to their coursework to ensure that students have a good understanding of how to work in groups, and stressing the importance of being an ethical engineer in a social context will surely prepare UMD's future engineers to succeed in a modern engineering environment.

This is not meant to take away from what students learn in ENEE200 in any way, as the knowledge they gain in this course surely widens engineering students' perspectives and makes them more well-rounded. Although Bucciarelli makes the case that ethics education should recognize "the social nature of day to day engineering, McGinn counters by arguing that "determining the ethical responsibilities of individual engineers should remain an important focus of engineering-ethical inquiry." For this reason, I think ENEE200 should remain as a required course for Electrical and Computer Engineering majors, and I would even go as far as argue that all engineering majors (and even computer science majors) should be required to take a course similar to ENEE200.

Throughout my time at the University of Maryland, I have never taken a class that has broadened my horizons and changed my perspective on engineering as much as ENEE200 has. Not only has this class exposed me to a variety of ethical cases in engineering while reading Robert McGinn's *The Ethical Engineer* and completing related assignments, but it has also made me a more well-rounded engineer as a whole. More and more often I find myself thinking about how I interact with different sociotechnical systems in my life, and analyzing ethical issues of engineering discussions in the news. If different aspects of this course were included in other engineering courses at UMD, I think you would find that our engineers being capable of making ethically responsible decisions and being truly prepared for challenges facing them in the real world.

I'm hoping that you take my ideas into account in your future planning for the STEM education at UMD! Please let me know if you have any questions or would like to discuss this further.

Best,
Nikolay Pomytkin
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Works Cited

McGinn, Robert E. *The Ethical Engineer : Contemporary Concepts and Cases*. Princeton

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Washington, DC: The National Academies Press, 2016. Print.