

# “The Development and Implementation of “Class Community Norms” to Facilitate Learning in a Social Justice-Oriented Classroom

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**Abstract**—The authors present a Full Paper in the Innovative Practice category. Their work describes and reflects upon the development of guidelines governing interactions within a critically reflective educational space. The Class Community Norms were co-developed by the instructor and students in an undergraduate course required for Integrated Engineering majors on the intersections of engineering and social justice during the Fall 2021 semester. The course aimed to challenge and build alternatives to existing structures of individual and systemic dominance within engineering and engineering education rooted in heteropatriarchy, racism, colonialism, and the classism that is inherent to capitalism. The intentional establishment of the space was paramount due to the course’s focus on critical conversation and collaborative group work that challenged established norms within engineering spaces.

While it is increasingly common practice for teachers, facilitators, and social activists to intentionally initialize collaborative spaces with lists of norms (also sometimes called “guidelines” or “ground rules”), the exercise can sometimes be superficial, unidirectional, and fleeting, lacking any form of reflection upon implementation. It is also important to note that this practice is not common in any form within engineering or STEM education. Alternatively, the instructor and students collaboratively constructed, reflected upon, and continually revised the Class Community Norms throughout the duration of the course. In light of a critical pedagogical framework, this work was done with explicitly-stated goals of recognizing and deconstructing social hierarchies and promoting growth-orientated learning.

The resulting Class Community Norms - norms related to learning, communication, teamwork, and accountability - are presented herein. The pedagogical methodology used for the development of, reflection on, and revision to the Class Community

Norms is included for the use of instructors and practitioners in engineering education, STEM education, and elsewhere. The authors (who are the instructor and several students from the class) also put forth their personal reflections on the implementation of the project, addressing their individual experiences, difficulties they encountered, and the impact of their social positionalities. Finally, recommendations are made for the ongoing development of this practice with the goal of constructing spaces that are critical, collaborative, growth-oriented, and promote individual and collective accountability. The authorship team encourages the use and refinement of the Class Community Norms practice within engineering educational spaces to promote discussion and collaboration that challenges existing structures of dominance within engineering education.

## I. INTRODUCTION AND BACKGROUND

It is well established that the field of engineering is a space largely dominated by wealthy, white, cis, straight, men [1], [2]. The oppressive effects of this dominance on marginalized populations continue to be explored by researchers in the field of engineering education (e.g., [3], [4], [5], [6]). Additionally, the historical and current uses of engineering knowledge and approaches to engineering practice shaped by policy makers, business tycoons, and engineers themselves have resulted in today’s vastly unequal distribution of access to the benefits of engineering knowledge and practice [1], [7]. In short, the field of engineering is socially unjust. Harnessing the liberatory power of education, the journey of engineering education

could and must prepare tomorrow's engineers to use their knowledge and skills to construct a socially just world.

The Engineering and Social Justice course at the University of San Diego is a required senior-level course for undergraduate students majoring in Integrated Engineering. This course is unique within engineering curricula because it is purely sociotechnical in content; complex conceptual material is presented that encourages critical reflection on the field of engineering and engineers' engagements therein. Topics covered in the course include systemic racism and white privilege [9], [8], [10], dominant engineering ideologies (such as depoliticization, objectivity/positivism, and meritocracy) [11], [12], social and technological determinism [13], organizing for power mobilization [14], [15], and engineering design for social justice [16], [17], [15]. Students' activities during the course consist of reading, dialoguing, and writing in order to unpack this challenging material. This is certainly an atypical approach to engineering education. However, prior work by past instructors has already demonstrated the vast potential of this course to reframe engineering education [18], [19], [20].

Students' unique pathways in engineering education at this institution also prepares them well to engage in sociotechnical analysis. Unlike in most engineering programs, engineering students at the University of San Diego receive both a B.A. and a B.S. at the conclusion of their studies. Thus, topics and approaches common to fields in the humanities are far more integrated within the curriculum here than they are in typical engineering programs. As it was her first semester working as a lecturer at the university, the instructor notes her surprise when students commented that conversations on some examples of ethically-problematic uses of engineering knowledge were actually continuations of conversations on the same topics they had engaged with in other engineering courses. Thus, the context here presents a unique opportunity for deep and meaningful exploration of critical topics pertaining to the intersections of engineering and social justice. However, the degree of success that we are able to achieve is very dependent on the pedagogical approach employed.

## II. PEDAGOGICAL FRAMEWORK

The epistemological and ideological foundations of the engineering field, laid over hundreds of years by empowered individuals within the dominant group, remain relatively unperturbed. This has resulted in "norms" of behavior and interaction within engineering and engineering education that emphasize several key pedagogical principles.

**Unidirectional learning.** An instructor metaphorically "deposits" technical information and procedures into the "empty vessels" that are engineering students. (This correlates to the "Banking Model of Education" theorized by Paulo Freire [21].) Thus, the instructor is viewed and treated as an all-knowing entity through whom knowledge-less students should uncritically "absorb" information.

**Uniformity and conformity.** Students enter a program or class with the same knowledge and the same perspectives; thus, they are "prepared" to "learn". Students who struggle

with any part of the engineering curriculum are helped back onto the "correct" path, so that they may exit the program or class with the expected knowledge and perspectives. Any difference in subsets of knowledge is a failure; deviation in perspective is, at best, not relevant to engineering.

**Competition and shame.** Under the commonly-embraced ontological approach of positivism, any engineering problem can only have a single correct answer [12], [23]. Students compete with one another (within a supposedly meritocratic process) to achieve the maximum quantity of correctness (above the minimum required by uniform output). Mistakes are simply incorrect, are indicative of failure, and result in personally and collectively attributed shame.

What does it take to "unlearn" these "norms"? Critical pedagogy offers us this challenge as educators. Through intentional instructional methods that recognize the relationship between education and politics and acknowledge power relations, we can begin to disturb the role of education in the perpetuation of hegemonic oppression [24], [25], [26]. Within our engineering classrooms, we can instead strive to frame the learning experience around the following key principles.

**Bidirectional learning.** Unlike in the unidirectional model, critical pedagogy recognizes that a constructive classroom environment is one in which students and teachers are learning [24]. This means that students play an important role in designing the educational process as well as sharing content. Using a two-way learning model, an instructor should recognize that knowledge transfer initiated by a student is every bit as valuable as that which they initiate themselves.

**Positionality.** Using a power-focused lens, an individual's positionality is defined as their relationship to systems of structural and systemic oppression [28], [27]. One critical aspect of the instructor's positionality is the power they wield over their students within the hierarchical academic structure; instructors have unilateral control over grades that will have an effect on students' opportunities over the entirety of their careers. Additionally, the social positionality defined by aspects of individuals' identities (e.g., race/ethnicity, gender, social class) impacts both their access to educational opportunities within structurally oppressive realities, as well as their interactions with others - including in the classroom.

**Cooperation and growth.** Freirean critical consciousness (or conscientização) is defined as the awareness and motivation required to stand and act in solidarity with oppressed peoples [21]. A primary objective of critical pedagogy is to develop students' critical consciousness through the educational process. This necessarily requires them to work and learn in cooperation with others with different backgrounds and experiences. Recognizing "education as the practice of freedom," [21, p. 34] critical educational perspectives declare that all students can learn and grow.

There is no neutral educational process. Education either functions as an instrument that is used to facilitate the integration of the younger generation into the logic of the present system and bring about

conformity to it, or it becomes ‘the practice of freedom’, the means by which [people] deal critically and creatively with reality and discover how to participate in the transformation of their world. [21, p. 34]

### III. NORMS, GUIDELINES, OR GROUND RULES

The development and implementation of community norms (also sometimes called “guidelines” or “ground rules”) is common practice in discussion-focused spaces (e.g., [22]). Norms of behavior are stated explicitly in order to frame conversations in a productive manner (which is particularly important in a course in which critically reflective dialogue is the primary mechanism for learning). Facilitators often present an initial list of norms, give participants an opportunity to add to them, call for conscious agreement from the group to uphold the resulting framework, and then attempt to establish a procedure in which the norms will be referred back to and updated as needed during the group’s activities; however, this last procedure is not frequently engaged with. Instead, the norms often get implemented as “one-and-done,” with no further reflection or refinement.

Lists of norms frequently include items such as “respect others,” “be and stay engaged”, and “give everyone equal time speaking”. Sensoy and DiAngelo note that classroom norms often fail to address the effects of power and positionality [29]. For example, the authors explain why a norm such as “give everyone equal time speaking” actually results in inequality, via further amplification of dominant perspectives. “To make space for dominant narratives in order to be ‘fair’ assumes that these imbalances don’t already exist or that equality of airtime is all that is needed to correct them” [29, p. 3]. In light of this, classroom norms should advise students to consider their positionality in relation to their contributions to discussions, recognizing that those with heightened social power should be more cognizant of the space they take up and cede the floor, if desired, to those who lack this power. This requires the development of critical consciousness [21] in order to both identify and intentionally contribute based on individual positionality. It also requires instructors to set course participation policies that support students as they critically analyze and make decisions about the space they take up during discussions without any detriment to their grades.

Another commonly employed norm, “assume best intentions,” is also problematic. It places the onus on marginalized students, forcing them to tolerate micro- (or even macro-) aggressions, and preventing the development of critical consciousness for students with privileged social identities [29]. Instead of focusing on the intent of their statements, students should be mindful of the impact they have on others.

Through use of critically-oriented class community norms, DiAngelo and Sensoy offer a challenge to social justice educators: to “recognize and respond to unequal power relations in the room, help manage patterns of internalized dominance and internalized oppression, and guide open and humble entry into the conversation [30]” [29, p. 8]. Some educators have

already made efforts to meet this challenge within engineering spaces. A review of literature locates examples of the use of formal norms within engineering classrooms [31], [32], [33], and some include reflections on critical issues such as power and positionality [34].

In a local example, the student authors note that Prof. Joel Alejandro (Alex) Mejia, formerly a faculty member in this department, presented his positionality to his students upon their first meeting when they took his class, explaining that he values uplifting minorities and creating a space where all students feel welcome. He guided students who had not been previously exposed to the idea of inequality, into the topic, and encouraged them to think about their own positionality by presenting his own. Throughout the semester, he highlighted events that elevated minority voices, and encouraged his students to attend these events. By first openly discussing his own positionality, and then bringing the students attention to the various minority voices around them, he was able to open the discussion surrounding power dynamics and systematic oppression in an engineering context.

### IV. PROCESS AND RESULTS

On the first day of class, the instructor presented the students with a preliminary version of the Class Community Norms (CCNs) via Google Docs, which was drafted from the critically-oriented existing literature on the topic, as discussed previously. The instructor gave students 5-10 minutes to read over the document on their own and add questions, comments, and suggestions. She then had them discuss the document and CCNs in groups of 4-5 (as the class was taught in hybrid format, students participating virtually were sent into randomly-generated breakout rooms, and students physically located in the classroom split into small groups) for an additional 5-10 minutes, adding more to the document as they did so. We all then came back together as a group and continued the discussion altogether, with the instructor adding additional comments to the document throughout the discussion. Later, the instructor went back through the document and made additional edits in response to points made during the full-group discussion.

In order to prevent a “one-and-done” approach to the CCNs, the instructor continued to set aside time in class (about 10 minutes per session) for work on the document. This time was divided between individual, small group, and large-group work time and discussions. After several class periods, students indicated that the work format was beginning to grow stale, so the instructor devised a new activity to probe students to interact more deeply with the CCNs. About a month into the semester, the students were asked to submit to the instructor anonymous responses engaging with the following prompts:

- “Select one of our CCNs and reflect on a time that you noticed you had to alter your behavior from your instinctive response in order to meet it. How difficult was it to do so?”

- Select one of our CCNs and reflect on how you think you can do a better job of meeting it. What will you change?
- Select one of our CCNs and reflect on a time that you noticed a classmate not meeting it. How did it make you feel? How did you address it, if at all? What support would you need to address it if it were to happen again?"

The questions were posed over three class periods. Students were given five minutes to write a response to a prompt and were verbally encouraged not to concern themselves with semantic proficiencies such as spelling and grammar, but rather to focus on the process of critical reflection. In the following class period, the instructor summarized the responses by presenting a few common trends:

"Things that we know are hard and we're working on both individually and together:

- Disagreeing with ideas and not people
- Stepping up vs. stepping back
- Exiting our comfort zones
- Taking care of our individual needs
- Considering our positionalities"

In general, students felt that they understood the approaches they should take in their efforts to meet the CCNs (and that these approaches were well outlined in the document) but noted that doing so was still challenging. The reflections indicated that significant progress still needed to be made to define useful approaches to the enactment of certain CCNs:

"Things we are still grappling with:

- Differentiating between social processes and stereotypes
- Moving beneath the surface
- Noticing our defensive reactions
- Moving past objectivity"

With this framing of their collective responses, the students continued to further unpack their collective experiences with short small- and large-group discussions framed by the following questions:

- "What is your response to the common threads presented from the reflections?
- What is difficult to enact in the CCNs (either for you or for the class as a whole)?
- What still needs to be improved/added/clarified in the CCNs?
- In what ways could the course better build an environment in which the CCNs are acted upon?"

This discussion generated further development of the CCNs, which continued over several class periods (with approximately 10 minutes of time dedicated per class period). In

addition to discussing the CCNs during designated class time, students also met with the instructor individually after class and during "student" (office) hours when they chose to. Students initiated discussions on difficulties enacting the CCNs both inside and outside of the classroom space. Future directions for work on the CCNs arose organically from these discussions. For example, students frequently noted a disconnection between the philosophical (or intentional) nature of the document and its practical (or impactful) use. In response, the "Accountability Norms" section was added to the CCNs. This included an "Accountability Plan" that was proposed by the second author, which was based on a similar plan employed in an extracurricular activity of hers. Several vignettes, or case studies, that personified fictitious instances of discussion-based conflict were used to assist in the development of our plan.

Finally, the "Teamwork Norms" section of the document was added during the last third of the semester, when students were primarily focusing on their group-based final projects for the course. These projects asked students to analyze and reframe their Senior Capstone projects from an explicitly social justice-based perspective [16]. Students continued to develop these norms as they worked in their teams for the remainder of the course.

The final outline of the CCNs is shown in Figure 1. For each item, the CCNs document contains additional detail in the form of sub-items.

The entire CCNs document is included as an appendix. The document has been color-coded by the origin of the text. Items that were included in the preliminary document written by the instructor are highlighted in red. This composes the "Learning Norms" (with growth-based learning defined as the pedagogical approach a priori) and much of the "Communication Norms" (which prioritized a critically reflective approach to dialogue). However, significant clarification and detail was added to the "Communication Norms" by the instructor as a result of in-class discussions and other conversations with students (highlighted in purple). The sectional structure (Learning, Communication, Teamwork, and Accountability) was added by the instructor on her own prerogative later in the course, so these headings are highlighted in green. Finally, blue highlights indicate material that was added to the CCNs directly by students. It can be seen that most of the content of the "Teamwork" and "Accountability Norms" was added by students directly. As these sections were added to the document later in the semester than the first two, this may indicate a generally increased comfort level with agentive action from students throughout the semester in response to critical pedagogical methods. Alternatively or in addition, it may be reflective of engineers' increased comfort levels regarding topics that are seen as less theoretical or more tangible.

## V. REFLECTIONS

In order to understand the full developmental process of the CCNs document, as well as the necessity of repeated, thoughtful discussions about the CCNs, we have included

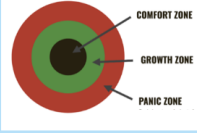
Learning Norms	Communication Norms	Teamwork Norms	Accountability Norms
Stay in the growth zone 	Be and stay engaged	Communicate openly with your team	Shared responsibility for accountability
	Own your impact	Distribute work fairly	Hold one another accountable
	Strive toward vulnerability and openness		
	Make sure everyone is heard	Strive for effective meetings	Accountability plan
	Address ideas and not people		
	Affirm and be generous in understanding	Everyone is responsible for each other's understanding and success	Framework for addressing harms
	Respect processing styles and honor silence		

Fig. 1. Outline of Class Community Norms

several instructor and student reflections on the process. These reflections may serve as a guide on what an instructor or students may expect if they were to develop their own set of CCNs, and further explain the implications of this document on the functioning of the class as a whole.

As explained above, students' positionality impacts their interactions with the instructor as well as each other. The class of 21 students was approximately a third women and a third students of color, which is significantly greater than the average representation of these groups within engineering programs [35]. This is perhaps due to the sociotechnical focus of the engineering college, as research has shown that marginalized students are particularly motivated to pursue engineering by the potential for positive impact within their communities [36], [37].

#### A. Corey (the instructor)

From my perspective, students' positionalities appeared to have an unsurprisingly significant impact on their experiences, as conflicts arose through discussions on difficult topics. I mediated these conflicts to the best of my ability, stumbling and learning while doing so, and encouraged students to revise the Class Community Norms in order to improve the document's ability to support mitigation through critical reflection and action. Additionally, as the course was taught remotely and offered in a hybrid format, I encouraged students to participate from whatever space they were most comfortable in. Gradually, women and students of color largely stopped attending class in person over the course of the semester. During the second half of the semester, only white men occupied the classroom space. This caused me significant worry, as I was concerned that I was not providing the support needed to the women and students of color in the class. This may very well have been the case, and the vast difficulty of confronting systemic social inequality within the classroom was certainly not rendered any easier by the hybrid format of the course - or by the fact that I myself was not there in-person to support intentional construction of the classroom environment (I was remote). Instead, I tried to lean on the Class Community Norms to support this construction. That may have been a taller order than the Norms were able to fill. The challenge

of critical norm-setting specifically within hybrid learning environments will require substantial additional cooperative learning efforts between critical educators and students going forward.

I knew from the beginning of the semester that the success of co-development of the Class Community Norms would rely heavily on the openness of lines of communication between myself and the students. Thus, I tried to emphasize critical and participatory pedagogical principles from the first day of class, recognizing my structural power over students and attempting to hand over pieces of that power. I frequently asked for student feedback, enacting suggested changes immediately, and strived to demonstrate my own vulnerability as an imperfect learner and leader. However, I was in no way successful in dismantling academic or social structures of power; I still wielded structural power through exercising the final say in course procedures and by assigning students grades, and social biases still caused conflict in the classroom (including my own).

Finally, I have noticed through conversations with other instructors that the consideration of their positionality is often central in their decision-making on the issues of power and authority in the classroom. For example, I have heard from women on several occasions, "I don't want students addressing me by my first name because they would never call their male professors by their first names, and I have earned my title as much as the men have." As a woman myself, and one who is frequently identified as younger than my true age, I have certainly considered when I would like to exert my authority - and I frequently choose to do so when I confront those with more social power than myself. The relationship between social and structural power is tricky, however. Embracing critical pedagogy, I strive to position myself vulnerably with students, over whom I hold structural power. On the other hand, I do recognize that social privilege afforded to me by my whiteness, cisgender identity, and heterosexuality renders the transfer of some power easier for me than it would be for instructors who lack these privileges.

### *B. Robin*

I attempted to involve myself in the construction of the Class Community Norms document by sharing what values were important to me and incorporating them within the given categories. I also tried to work with my peers in the class to craft the language of the guidelines in a way that made sense to and supported them - primarily those who identified as a part of a minority community. This allowed me to look at the guidelines from multiple intersectional perspectives during their fabrication and alterations. I also felt comfortable making suggestions to the guidelines as the semester progressed because I understood that it was a living document, which to me meant that no guideline was permanent nor deemed perfect.

At the beginning of the semester, I attended the class in-person along with the majority of other students enrolled in the course. As the semester progressed, I noticed that more and more of my peers attended class virtually and stopped coming to the classroom in-person. Unfortunately, my peers that left primarily identified as a part of at least one minority community and brought valuable perspectives that I wasn't able to hear as often given "virtual classroom norms" such as staying on mute unless called upon. Those that remained in the classroom as the semester continued were white men - meaning that each discussion breakout group in the physical classroom consisted of entirely white voices. As a result, I made the conscious decision to start attending class virtually so that I could continue having conversations with my peers who identified as marginalized. I also made this decision because I was uncomfortable hearing and addressing some of the language that was being used by the white men that remained in-person in the classroom. I did, however, feel comfortable to talk to the instructor about this issue because of the establishment and framework of the Class Community Norms document and because I felt that she deeply cared about me and my concerns. Together, we came up with the solution of attending class virtually, which I felt both strengthened my relationship with my peers who identified as marginalized and enabled me to participate in class from a place that I felt more comfortable and safe.

### *C. Scott*

The Class Community Norms document was a critical instrument in helping me acknowledge that mistakes will inevitably happen when learning about and attempting to develop social justice frameworks. Some of us have demonstrated that we have had some misconceptions about other cultures, etc., so it now feels more natural to talk to an idea rather than a person, because it became so common for us to be wrong.

In general, it was not very difficult to admit we did not know something, or that we were wrong, because all of us quickly learned how much we did not know as a result of our academic backgrounds being highly technical.

One norm that I particularly resonated with was "Recognize that feelings and ideas are impermanent and not reflective

of the characters of the people who hold them." I think the impermanence is important because we are almost exclusively just products of the people we associate with and the thoughts that they have themselves. In other words, there is no reason we would not be able to continue to change feelings and ideas if the subjects around us are changing accordingly.

### *D. Austin*

I have always worried about how I was perceived in engineering classrooms as a multiracial student. Because of this, I have always had a fear of speaking up or participating in class unless forced to do so. Towards the end of my junior year, I began to reflect and came to the understanding that my intersectionality is a unique perspective that should have a place in the classroom leading me to set a goal to speak up more in my last two semesters. However, it was difficult to completely step out of my comfort zone of not participating, so I chose to not contribute much to actually building the Class Community Norms. Instead, I used the Class Community Norms paper as a reminder to step into the growth zone. Seeing my peers write about how they wanted to create a safe learning environment reinforced that I can be more comfortable sharing my perspectives in discussions. Having to look at the comfort, growth and panic zones diagram and the norms in place to create a more open minded classroom throughout the entirety of the semester helped me to build the confidence to speak up more than I have in any other class.

### *E. Lauren*

I found it critical to modify the community norms to include an accountability plan. I agreed with many of the steps outlined in the norms document, and the modifications that we made to the document, but I did not feel like we had enough emphasis on the application of these ideas. Further, I did not feel comfortable being fully open surrounded by white, cis, straight men without a way to hold them accountable for any microaggressions I noticed. Therefore, I was motivated to add a procedure to the document that outlined the steps students would need to take in order to address their grievances with someone else in the class in a mature, constructive way. After discussing my thoughts on holding people accountable with the professor, not only did we develop the accountability plan, but we also had an insightful conversation that changed how I decide when to stand up and when to step away for my own mental health. We discussed that the burden to stand up against an aggressor is not on the minority, but rather on those in a similar positionality to the aggressor. For example, if a white man is saying a racist comment to a black man, it would be the responsibility of the white people listening to stand up against the aggressor. It is not the black man's responsibility to educate or retaliate against their aggressor. This idea helped guide me on deciding when I should speak up against someone, and when I should let it go. I now know to stand up for minority opinions when I am a person in power, elevating the voices of the vulnerable classmates. This is not only helpful for the person who is vulnerable,

but also in challenging what the person of power is saying. It is often more meaningful when someone who has the same power status as you elevates a minority opinion. The Class Community Norms framework and repeated discussion of inequalities brought this conversation to light, and helped me understand the power dynamics at play in our society.

I also noticed how important a Community Norms document could be outside of just a social justice oriented course. In another course I was taking concurrently, we were debating a topic within a classroom setting. We were arguing over a topic as a class and I was the only person who had a certain opinion on a topic. One of my fellow classmates, who was in the majority, pointed their finger at me and attacked my argument. This made me feel very upset because I was not fully invested in the idea and was personally attacked in front of a large group of people. I did not say anything, and my teacher ended up arguing on my side to help defend my position, and at that point my character. In that class, I would need something like a Community Norms document to feel comfortable addressing the issue. Had my classmate framed their feelings within the bounds of the norms we had all agreed upon, it would have likely seemed less like an attack on character and more an attack on the ideas we were discussing. Norms would not only have helped avoid this issue, but also allowed a framework for having an honest, constructive conversation about why I was upset, and what could be done to rectify it. A norms document is scalable in the engineering educational context, creating a space where minority and underrepresented people feel more comfortable expressing their feelings, and where people in the majority better understand how their privilege affects the experience of those around them.

#### *F. Basile*

The framework on which the Class Community Norms were built was for me the important part of the class. It helped me in having a better understanding of the message that was being transmitted by the teacher as well as the students. In actively engaging the students towards building this framework, the process felt genuinely right. The Norms are the voices of engineering students who have usually focused on the technical aspects of our work, and now realize the importance of having multiple perspectives. Engineering work has many different impacts on different communities. The Norms built that framework towards our understanding of this, not only for this class, but for the impacts our actions will have throughout our entire lives.

In conclusion, I think that the topics described in the Class Community Norms are often forgotten, especially in the scientific majors. Nevertheless, most of these majors' impacts on the world are, as we saw throughout the semester, directly related to the topics in the Norms. The Class Community Norms is, to me, a great framework to use towards raising awareness through education. The Norms helped us realize that small, everyday actions have a bigger impact on the world than we would otherwise imagine.

#### *G. Elizabeth*

Our class community norms document was a proven document that continually shown its importance throughout the duration of our class. Usually when professors make documents such as these, it gets reflected upon for maybe the first two classes and then abandoned. The difference in having a living document to consistently monitor and change is what made the experience in the course so special. We slowly got to unravel the document when new ideas came up. At some times it did feel very repetitive and unproductive, but looking back I think that it is part of the process.

I wish now there were more classes where a document like this is made to allow students a safe space to speak their minds freely with boundaries set and agreed upon by everyone. This document made it easier for me to speak my mind not only in the comment section of the readings, but also in class discussions. Having reflections on these community norms was another aspect I found to be very beneficial, so I could dissect each norm and see how the course has affected my views on the matter, and how the readings change or amplify my views.

### VI. CONCLUSIONS AND FUTURE WORK

The CCNs process was employed to develop the critical consciousness of engineering students and their instructor, enacting growth-based learning toward social justice goals. While the CCNs document was a work-in-progress throughout the semester, both in terms of the document itself and the activities that produced it, the authors believe that the final document (as presented in the appendix) can serve as a useful resource in critical, discussion-oriented spaces. We also believe that the methods we utilized to produce the document may serve as a valuable starting point for further development of pedagogical methods for critical engagement. Finally, both the students and the instructor can utilize the skills they developed throughout the production of the CCNs to advance just and equitable communities inside and outside of engineering.

Critical approaches to the utilization of our "finalized" document will necessarily demonstrate its failure to capture the lived experiences and liberatory needs of all marginalized peoples; thus, it will need to continue to develop and expand in contextualized ways. As engineering educators continue to grapple with the sociotechnical implications of their work, the impact of the CCNs points to the indispensability of intentional grounding in the development of students, teachers, and the field of engineering as a whole.

### VII. ACKNOWLEDGMENTS

The authors would like to collectively thank the remaining contributors to the CCNs: Jane Kim, Alexander Perko, Khepra Mims, Andrew Kovaleski, Quinn Bigane, Theresa Woods, Matthew Willis, Cristian Pena-Dominguez, Koby Soden, Andres Mallea, Alec Dachs, Eric McGaw, Rosie Pham, and Hannah Petersen. They are also indebted to the faculty members in the Department of Integrated Engineering at University of San Diego for supporting this course and this project.

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## APPENDIX

### GENG 350: ENGINEERING & SOCIAL JUSTICE Class Community Norms

Original document written by instructor

Instructor added to document

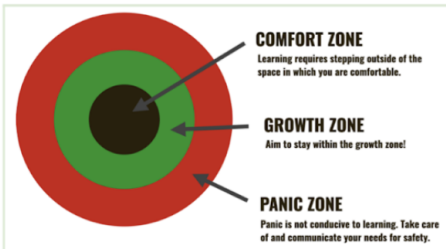
Instructor added to document based on student comment/discussions

Student added to document

#### LEARNING NORMS

##### Stay in the Growth Zone

- Identify where your *learning edge* is and push it.
  - When you think, "I already know this," ask yourself, "how can I take this deeper?" Or, "how am I applying in practice what I already know?"
- Differentiate between safety and comfort. Embrace discomfort as part of the learning process.
- Take care of your needs. Be honest with others about your needs.
- Step out of the space if you find yourself in the panic zone.



#### COMMUNICATION NORMS

##### Be and Stay Engaged

- Actively, consciously listen as much as possible.
- Be present. Don't check out.
- Dig beneath the surface of ideas.
- Participate in a dialogue – find ways to join the conversation

##### Affirm and Be Generous in Understanding

- Honor the lived experiences of others.
- Appreciate that we are all products of different experiences we have and feel different ways because of that.
- Accept that we will often disagree on two valid, mutually exclusive positions.
  - Affirm understanding of one another's positions before judgment.
  - Be empathetic in understanding why people feel the way they do.
  - Recognize that, in a constructive conversation, both parties should experience growth and learning despite disagreement.

##### Respect Processing Styles and Honor Silence

- Recognize that different people have different needs out of a conversational environment.
  - Attempt to meet others' needs.
- Give others time to think and space to process conversations and ideas.
- Come to student hours to continue conversations.
- Do not interrupt other people while they are sharing their side/opinion

#### TEAMWORK NORMS

##### Communicate openly with your team

- Give your team your best estimate of when you'll get things done.
- Let your team know if you're overwhelmed or need more help/time.
- Use "yes, and..." statements rather than "yes, but..." statements.
  - Your first reaction to an idea should be support. Behind every idea is a person.

##### Distribute work fairly

- Explicitly label who is responsible for what parts of the work.
- Strive to complete 'assigned' tasks by the time you agreed upon.

##### Strive for effective meetings

- Show up.
- Be on time.
  - Communicate well beforehand if you'll be late.
- Come to meetings prepared, focused, and ready to work.
  - Communicate distractions you are experiencing.
- Schedule meetings with flexible methods that meet everyone's needs.

##### Everyone is responsible for each other's understanding and success

#### ACCOUNTABILITY NORMS

##### Accountability is the responsibility of:

- The students
- The instructor
- The institution

##### Own Your Impact

- Understand that intent matters less than the harm we cause, and move towards making each other whole again.
- Accept that mistakes will happen, and move forward responsibly and empathetically.
- State acknowledgement that our individual perspectives are borne from our *social positionality* (e.g., race, class, gender, sexuality, ability).
  - Recognize how your own social positionality informs your perspectives and reactions to your instructor and those whose work you study in the course.
  - Make space for those with less power both in the space and in affected issues, inviting them to share their perspectives.

##### Strive Toward Vulnerability and Openness

- Be willing to grapple with new and/or challenging ideas.
- Be honest about your feelings and opinions on issues, both to yourself and to others.
- Reserve the right to change your mind.
- Notice your own *defensive reactions*.
  - Pay attention to how your reactions affect others. This can help identify your defensive reactions.
  - Attempt to use your defensive reactions as entry points for gaining deeper self-knowledge, rather than as a rationale for closing off.
  - Recognize that understanding others' perspectives or reasons is more valuable than shutting them out.
  - After situations of conflict, reflect on how your own defensiveness may have been present.

##### Make Sure Everyone Is Heard

- Practice self-reflection to analyze the ways in which you are taking up space.
- Step up into space if you find yourself regularly contributing too little. Step back if you find yourself contributing too much.
- Understand how your social identities affect your perception of the space you take up, and how you might be preventing others from contributing.

##### Address Ideas and Not People

- Express disagreement with the idea, not the person. Understand that disagreements are among the ideas of people, and not among the people themselves.
  - Explicitly re-state the idea you are disagreeing with, rather than saying, "I disagree with [name]."
  - Recognize the difference between perspective that is subjective and truth/fact that is objective. Acknowledge that most of what we share with others is the former.
- Recognize that feelings and ideas are impermanent and not reflective of the characters of the people who hold them.
- Discuss the pros and cons of different ideas, but remember that this is not reflective of pros and cons of people.

##### Hold One Another Accountable

- Work together to set clear expectations for the particular space you are in, beyond what is outlined in this class community norms document.
- Use check-ins to gauge from what state you and others are speaking from. Recognize that some conversations may be better pursued at a different time.
- Ask for help when you need it. Express difficulties you are encountering within the space.

##### Accountability Plan

- Reach out to meet with another student if:
  - They are asking for help understanding
  - They said something that bothers you
  - You feel comfortable and safe doing so
  - You perceive that they are struggling and think they could use support
  - Take a break and continue the conversation later if:
    - Send them a text/email and get no response
    - You get a defensive response instead of an open conversation
    - You no longer feel comfortable
- Reach out to meet with the instructor if:
  - The previous step fails, which might look like:
    - You continue to get no response
    - The problem continues even after meeting with the other student
  - You don't feel comfortable or safe reaching out to the student directly
  - The issue involves the instructor and/or the class generally
- Reach out to meet with a higher authority figure if:
  - The previous step fails, which might look like:
    - The instructor is not sufficiently responsive
    - The problem continues even after measures are taken to reduce conflict
    - The conflict is causing you to feel unsafe
  - You don't feel comfortable or safe reaching out to the student or instructor directly

##### Address harms caused using the following framework:

