Table 15b *Engineering for Social Justice (E4SJ) framework for Engineering Education*

Engineering for Social Justice (E4SJ) framework for Engineering Education		
Item	Factor 1	Factor 2
1. Listening contextually – at the basis of Engineering practice is listening to and empathizing with different communi ties' perspectives and their constituent struggles, concerns, desires, and preferences.		
2. Identifying structural conditions – these perspectives must be understood through the lens of the structural conditions (e.g., racial, gendered, socioeconomic) that constrain those communities' opportunities, desires, and aspirations, as well as the structural conditions that constrain the engi- neers' own opportunities, desires, and aspirations.		
3. Acknowledging political agency / mobilizing power – engineers must understand how communities' political power and agency (as well as their own) can be mobilized and leveraged when developing engineering solutions.		
4. Increasing opportunities and resources – engineers should work with communities to identify the opportunities (e.g. health, education, housing, and employment) that could be improved by leveraging and mobilizing political power, engineering solutions, and other resources, as mediated by structural conditions.		
5. Reducing imposed risks and harms – engineers should work with communities to identify how to leverage the identifed resources to develop solutions in a way that is sensitive to how the solution's potential risks could be distributed across the community.		

Engineering for Social Justice (E4SJ) framework for Engineering Education		
Item	Factor 1	Factor 2

Zhu, Y., Wen, R., & Williams, T. (2024). Robots for Social Justice (R4SJ): Toward a More Equitable Practice of Human-Robot Interaction. 2024 19th ACM/IEEE International Conference on Human-Robot Interaction (HRI), 850–859. https://doi.org/10.1145/3610977.3634944

Grounded in the Engineering for Social Justice (E4SJ) framework for Engineering Education