

## Social Justice & Relationship to Gender & Multiculturalism

### Social Justice: Equal Rights – Equal Treatment – Equal Responsibility

- 5 Pillars of SJ: Access, Equity, Participation, Diversity, Human Rights
- Social identity (gender, race, ability, class, etc.) is central to any discussion of social justice.
- Especially true for engineering considering it is a white male dominated profession.
- ENGR 101 centers role of gender, multiculturalism, and ability in engineering through discussion and evaluation of historical contexts, current state of the profession, impact on technology and innovation evolution, and future considerations.
- All course content, including technical topics, examines relationship to social constructs of gender and/or multiculturalism.

### ENGR 101 Big Picture Questions

- Who gets to be an engineer? (lack of diversity w/ focus on gender & race; representation)
- Who decides which problems engineers solve? Who benefits from those solutions? Who suffers the cost? (White, able-bodied, male problem identification & solutions).
- How do our cultural ideas about race, gender, disability and sexuality influence engineering knowledge and practice?
- How can engineering and design serve as a force for equity?
- Reflect on your multiple identities (race, gender, citizenship, ability, class, sexual orientation), family history, and life experiences and how these contribute to the way you interpret the world and the way you may practice engineering. What unique perspectives can you bring to the profession and how might that impact equity?

### Examples of what is covered in ENGR 101:

- Who identifies as an engineer?
  - ENGR as a white male profession
  - History of sex/gender and sexuality in ENGR.
  - History of race in ENGR
  - How do racism & sexism manifest in engineering solutions
  - How the lack of diversity impacts technical solutions & problem solving.
- Social identity theory
  - Intersectionality & privilege
  - Stereotypes, prejudice, discrimination, oppression
  - Gender & racial discrimination in ENGD (case studies & impact)
  - How do we disrupt barriers and challenges associated with racialized and gendered perceptions of engineering
  - Development of a socio-technical mindset
- Bias in Design

- How engineering & scientific theories have been used to justify bias such as research associated with physiological differences associated with gender, race, disability, and sexual orientation.
- Ex: Facial recognition software (ethnicity/race); smart watches (disability); crash test dummies (gender), artificial intelligence
- Exploring engineering practices that enhance gender, racial, class, and cultural equity
- Increasing representation
  - Historical data on demographics of the engineering profession (including academia) with focus on gender & race.
  - How to advocate for and represent marginalized groups
  - What we gain to benefit from more diverse engineers
  - Relationship between access to ENGD careers and advances social equality.
  - How do we change the narrative of engineering (from “suffering & hardship” to “support & collaboration”) and how might that impact marginalized groups.