Overcoming Challenges to Infusing Ethics in Design

Capstone DESIGN@MINES
Jered H Dean
“A Fourth Industrial Revolution is arising that will pose tough ethical questions with few simple, black-and-white answers...Ultimately, evaluation of the net effect of new technologies on individuals and society is needed to identify appropriate rules and boundaries.”

The Capstone Ethics Basics

Code of Ethics
- Integrate into Syllabus
- Use to Analyze Case Studies

Legal Basics
- Lecture on Torts
- Activity on Contracts
- Engineers’ Lament Case Study

Licensure
- Licensure Video
- Step-by-step on how to register for FE Exam
- NSPE Representative Panel
“Licensees shall be cognizant that their first and foremost responsibility is to the health, safety, and welfare of the public when performing services for clients and employers.”

-A.1 in NCEES Model Rules, section 240 published August 2013

Self-Critique Assignments

• Design tools/checklists focused on health, safety, and welfare incorporated into capstone using self-critique assignments

• Example assignment prompt and rubric are included incase they spark ideas.

• Our program is multidisciplinary so it gets complex...
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Cheesy Metaphor Time!
Engineering for Social Justice (ESJ)

Check out: 
Engineering Justice: Transforming Engineering Education and Practice 
by Jon Leydens and Juan Lucena
Social Justice Checklist

Co-developed w/Douglas Van Bossuyt

- Students didn’t know how to apply the ideal of social justice
- Checklist to help spur students to connect design tools to Engineering for Social Justice

So let’s go beyond the basics!

• How might we use engineering tools and methods to get our students to see Ethics from different angles?