



Online Ethics Center
FOR ENGINEERING AND SCIENCE

Corporate Social Responsibility Course

Author(s)

Jessica Smith

Description

This activity is considered an NAE Exemplar in Engineering Ethics Education and was included in a 2016 [report](#) with other exemplary activities. This activity seeks to help students understand and question the links between engineering and social responsibility and the strengths and weaknesses of corporate social responsibility.

Body

Exemplary features: Coverage of a novel and important topic: critical examination of corporate social responsibility and engineers' role in it

Why it's exemplary: The social and environmental dimensions of the mining and energy industries pose vexing ethical challenges that are “wicked problems,” so-called because they are (1) difficult to formulate and resolve in ways that are satisfying to all stakeholders; (2) intertwined with other major problems; and (3) too crucial to be left unaddressed. The growing significance of these industries poses special challenges for engineers from a variety of disciplines seeking to work at the intersection of corporate interests, public welfare, environmental sustainability, and professional autonomy. Yet practicing engineers report that their training in these areas occurs at work, rather than in their undergraduate study. This course addresses that gap by using social science research, lectures from practicing engineers, and real-world group projects to help students understand and question the links between engineering and social responsibility, laying the groundwork to

become agents of social responsibility in corporations that must deal with wicked problems.

Program description: Corporate social responsibility (CSR), as a contested and evolving field of practice, has become the dominant framework to understand and address the social and environmental impacts of many industries, from manufacturing to pharmaceuticals. The term first arose in mining, oil, and gas companies seeking to allay public outcry over human and environmental disasters, and quickly expanded into other sectors. The field of CSR is internally varied, but policies and activities under its umbrella all share an acknowledgment that corporations must address the social and environmental impacts of their activities and improve their relationships with wider publics. CSR is not a panacea for reconciling ethics with economics, nor a disingenuous attempt to cover up the continued ills of irresponsible business practice. It is an increasingly influential suite of practices, concepts, organizations, and institutional frameworks that have transformed the ways firms organize both their internal activities and their relationships with external entities such as government agencies, activist groups, and community stakeholders.

Although CSR policies and programs shape the work done by practicing engineers, very few undergraduate educational experiences help engineering students critically investigate the strengths and limitations of CSR as a tool to manage the social and environmental impacts of their work as engineers. This upper-division course prepares students to (1) understand what CSR as a field of practice means for differently positioned actors (companies, employees, communities, etc.); (2) investigate the tensions, contradictions, and synergies in how CSR, professional codes of ethics, and personal senses of responsibility promote or hinder social and environmental well-being; and (3) identify links between the “technical” work of engineering and the “social” work of community relations to understand the sociotechnical nature of CSR. Students enroll from a variety of engineering disciplines, including mechanical (40%), petroleum and mining (30%), and environmental or civil (30%).

Case studies draw from the mining and energy industries, which pioneered CSR tools in response to critics, and class activities draw out comparisons and potential applications to other industries. To contextualize the rapid ascendance of CSR, the course begins with a lecture from a guest speaker who experienced first-hand a crisis in community acceptance of industry or what the industry terms the “social

license to operate.” Previous speakers have included a geologist with experience in gold mining, community development, and conflict minerals in the developing world, and a lawyer working in the area of community conflict surrounding “fracking” for oil and gas in Colorado. Course readings include social science articles that identify the key elements of CSR and compare the policies, programs, and projects enacted under this banner with other frameworks to conceptualize the relationship between industry and its publics, such as state regulation, voluntary agreements and conventions (such as those promoted by the ISO and United Nations), and legal tools such as Free, Prior and Informed Consent. It also uses ethnographic research to show how communities, especially in the developing world, use different cultural models to engage with corporations, for example as benefactors with obligations to provide financial support to poor communities rather than as “partners” or “stakeholders” who help themselves through entrepreneurial activities. The articles include cutting-edge scholarly research on CSR and detailed case studies, such as the evolution of community referendums at the controversial Marlin gold mine in Guatemala or foiled attempts at community development in the gas fields of Bangladesh. Guest lectures from industry and NGO professionals with on-the-ground experience provide opportunities for students to see CSR as a dynamic and contested field of practice that is shaped by individuals such as themselves. The goal of this section is to prepare students to think critically about the strengths and limitations of CSR to address the ethical dilemmas posed by industry, given that CSR is a voluntary set of practices, guided by private interests and organizations that sometimes intersect with government mandates and professional codes of conduct.

Students then dive deep into investigating the relationship between engineering and CSR, challenging assertions that it belongs in the “social” domain and is extraneous to technical work. They explore how the rise of offshore oil production, for example, has affected corporate-community-government relations in Africa and the North Sea, or how the design of open-pit mines engenders chronic injuries among miners. CSM alums visit to share how their work is both influenced by and contributes to their companies’ community relations efforts. These perspectives examine the implications of technical design and decision making for social and environmental justice, expanding engineering ethics beyond the microscale to encompass pressing macro-level concerns.

The final week invites students to consider and share how CSR lives in their own disciplines and future careers, investigating how the particular material, social,

environmental, and economic elements of nonextractive industries create different sources of conflict as well as potential tools for resolution. A series of small assignments culminate in student groups producing an original, researched stakeholder engagement strategy for a real-world engineering project. Using environmental impact assessments, social science research, news articles, and other sources, students identify, prioritize, and analyze the project's stakeholders and their needs; design methods that meet global performance standards for engaging stakeholders; and identify the place of engineering solutions in larger social responsibility efforts. They then link their project with course readings to write an essay addressing the following: Was it possible to craft a stakeholder engagement plan that fully reconciled the needs and interests of the corporation and its stakeholders? Why or why not? What does your answer to those questions suggest about the strengths and limitations of CSR? What does your experience suggest about the role engineering should play in CSR or other frameworks for corporate-community engagement?

The final project challenges students to apply course concepts to novel contexts and create new knowledge about engineering and social responsibility in relation to corporate programs, professional codes of conduct, government standards, international conventions, and community organizing. The questions, activities, and discussions throughout the course provide a foundation for future engineers to navigate the ethical challenges underlining even the most vexing of wicked problems.

Assessment information: The newness of the course precludes long-term assessment, but initial student outcomes and the growing reach of the course indicate positive results in student learning and engagement. In addition to the final project, student learning is assessed on Analytic Reading Memos, which challenge students to distill, critique, and extend the main argument of a scholarly reading; oral presentations; a synthesizing midterm essay; and an in-class debate. Progress over the course as a whole is measured through pre- and postessays in which students respond to the following questions: Do corporations have responsibilities to society? Why or why not? If you think they do, what are those responsibilities? What role does engineering play in relation to fulfilling those responsibilities? Comparing the pre- and postcourse essays reveals significant expansion in what students view as the domain of CSR; increased complexity in defining and critiquing the term; and more sophisticated understanding of its relationship with engineering. For example,

the majority of students initially flag only environmental performance as a contribution of engineering to CSR, leaving aside community development, but end the course identifying how even the most minute engineering decisions impact the wider well-being of communities.

Student response to the course was overwhelmingly positive; students outlined the value of the course for their engineering careers, and one said it was the “most relevant Liberal Arts and International Studies class offered at this school.” Students report that they introduce the topics and debates of the course in later ones. Perhaps the strongest testament to the course is the expansion of its core topics throughout CSM. The course links the school’s Humanitarian Engineering program and its Social Justice curriculum to the school’s historic strengths in the extractive industries, which were previously outside the scope of the Humanitarian Engineering program. Professor Smith gives an invited lecture on CSR each semester to Nature and Human Values, a required first-year ethics and writing course, and will lecture in the senior seminars in both Mining and Petroleum Engineering.

The success of the course has resulted in the creation of an additional upper-division course that addresses social responsibility and engineering for natural resource development in indigenous communities. The course also laid the groundwork for Smith’s recent \$450,000 NSF grant in the Cultivating Cultures for Ethical STEM program (“The Ethics of Extraction: Integrating Corporate Social Responsibility into Engineering Education,” Award 1540298), which will ethnographically investigate how engineers working in the mining, oil, and gas industries understand and practice social responsibility and what role particular undergraduate educational experiences played in preparing them (or not) to navigate the social and environmental challenges of their professional practice. It will then use these data to integrate a critical perspective on CSR into engineering as well as social science and humanities courses at Mines, Virginia Tech, and Missouri University of Science and Technology. Finally, the course inspired the vision for the ongoing planning of a new institute at CSM dedicated to socially responsible engineering, which would be the first of its kind.

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Resource Type

Educational Activity Description

Parent Collection

NAE Exemplars in Engineering Ethics Education

Topics

Corporate Social Responsibility

Social Responsibility

Discipline(s)

Engineering

Teaching Ethics in STEM