



Online Ethics Center
FOR ENGINEERING AND SCIENCE

General Ethics Instruction Guides: Engineering & Science

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Description

These resources are a starting point for introducing ethics into science and engineering curriculum.

Body

These resources are a starting point for learning to introduce ethics into science and engineering curriculum.

Engineering

Background Concepts for Teaching Engineering Ethics

A very short guide by the Online Ethics Center giving some advice and resources for beginning to introduce students to engineering Ethics.

Davis, Michael. Thinking Like an Engineer: The Role a Code of Ethics Plays in the Practice of a Profession

This article, by CSEP Senior Fellow Michael Davis, is an extremely good description

of the role ethics plays in engineering practice.

Johnson, Deborah. “The Social/Professional Responsibility of Engineers” *Annals of the New York Academy of Science* 577 (1988) pp.106-114.

Johnson discusses the social role of engineers, and argues for a framework to help individuals think about some of the larger decisions associated with scientific research. The author discusses three different principles put forth by engineering ethics literature, and argues that engineers are not amoral guns for hire, nor should ethical decision-making be guided solely by one’s personal conscience. Rather, these are issues of professional judgment and professional commitment at stake.

Lynch, William T. and Ronald Kline. “Engineering Ethics and Engineering Practice.” *Science, Technology, and Human Values*. 25 (2000) pp. 195-225.

Looking to the Challenger Shuttle Explosion, the authors of this article explore how engineers can learn to identify features in their everyday practice that shape the daily decisions they make with ethical implications, and suggest some potential techniques for covering ethics topics in a classroom setting.

Science

On Being a Scientist: Responsible Conduct of Research, 2009.

On Being a Scientist provides guidance to students and researchers and describes the ethical foundations and standards of scientific practices and some of the personal and professional issues that researchers encounter in their work. This is an extremely good introduction in beginning to plan what should be covered in any ethics education program.

Office of Research Integrity Introduction to RCR by Nick Steneck

This booklet introduces the nine core instructional areas in responsible conduct of research in a way that follows the entire lifecycle of the research process, from planning, to conducting, reporting and finally reviewing research. Written to be of use to students and instructors alike, it includes featured case studies, discussion questions, and links to other electronic and printed researches for each core area.

Pimple, Kenneth. “Six Domains of Research Ethics: A Heuristic Framework for the Responsible Conduct of Research” *Science and Engineering Ethics*. 8 (2002) pp. 191-205.

This short article provides a simple yet comprehensive scheme for responsible conduct of research. The author offers a conceptual framework for looking at teaching research ethics that first asks three questions about the ethics of any research project or product, “Is it true?”, “Is it fair?”, and “Is it wise?” He then takes these questions and divides them into six domains that provide a logical, intuitive and less simplified way of organizing responsible conduct of research in a way that covers the Core Institutional Areas outlined by the U.S. Public Health Services Policy on RCR education. This organization also helps highlight areas not covered by the Core Institutional Areas, such as issues of social responsibility and research and clarify often confusing areas.

Zigmond, Michael J. and Beth A. Fischer. “Beyond Fabrication and Plagiarism: The Little Murders of Everyday Science” *Science and Engineering Ethics* 8 (2002) 229-234.

In a commentary to Pimple’s “Six Domains of Research Ethics,” the authors discuss the importance that research ethics education focus not only on actual misconduct in science, but also to the smaller misdemeanors or “little murders” that occur daily in science.

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Resource Type

Bibliography

Topics

Research and Practice

Research Misconduct

Discipline(s)

Research Ethics

Publisher

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