

# **A Handbook to Address ABET Criterion Four Issues**

**Tim Healy**  
**Electrical Engineering**  
**Santa Clara University**

The School of Engineering at Santa Clara University has developed an Engineering Handbook to address a number of issues that are often not treated in engineering programs. These include the eight issues specified by ABET under Criterion Four (economic, environmental, sustainability, manufacturability, ethical, health and safety, social, political) and three additional issues that are of particular interest to Santa Clara University (usability, life-long learning, compassion).

One chapter in the handbook is devoted to each of these eleven issues, and a twelfth chapter addresses “Bringing It All Together”. The handbook is used throughout the four-year program, building up to the senior capstone course, where students are required to address the eight ABET issues, as well as the Santa Clara University issues. A typical use of the handbook throughout the four-year program is for a professor in an engineering course to assign a chapter to be read or reviewed and a problem or case to be worked out. Sometimes these cases flow naturally out of the material of the course. Sometimes the connection is not so clear.

The handbook is also used in a graduate course in engineering ethics. The chapter in the handbook on ethics was developed by the University’s Markkula Center for Applied Ethics, and provides an excellent introduction to ethical theory. With this as background the class considers ethical cases from most of the eleven areas. It is particularly important to consider cases that cross a number of lines of interest, such as for example, health and safety, environment and economics.

The paper includes examples of cases used in the undergraduate program, and in the graduate course.