Introducing Ethics and Engineering: the Case of Delft University of Technology

G. J. Scheurwater* and S. J. Doorman**
Delft University of Technology, Advisory Committee on Ethics, The Netherlands.

Keywords: engineering, ethics, inductive approach, applied research, ethical guidelines, field-specific approach, conferences

ABSTRACT: This article focuses mainly on (1) the policy of Delft University of Technology since 1992 as regards the university-wide introduction of a compulsory course on ethics and engineering, and (2) the ideal structure of such a course, including the educational goals of the course.

(1) Introduction

In its Policy Paper 1993-1996, published in 1992, the Board of Delft University of Technology (DUT) formulated the intention to make more explicit “the ethical aspects of education and research carried out by DUT”. Delft’s intention fully corresponded with the content of the Bill of Higher Education and Research, which was ratified by both Houses of Parliament of the Netherlands in 1993. The Bill demanded that all Dutch universities formulate so-called guidelines as regards the ethical aspects of all their activities, i.e. education and research. In accordance to this Bill, these “guidelines” could only be established and implemented on the basis of recommendations by special committees which had to be set up by the universities themselves. In 1993 DUT’s Board was one of the first in The Netherlands to establish such a committee, namely the Advisory Committee on Ethics (ACE). The ACE

* Dr. G. J. Scheurwater is Senior policy-advisor to the Board of Delft University of Technology.
** Prof. S. J. Doorman is Chairman of the Advisory Committee on Ethics of Delft University of Technology.

Address for correspondence: Dr. G. J. Scheurwater, Delft University of Technology, Advisory Committee on Ethics, Julianalaan 134, 2628 BL Delft, The Netherlands.
Paper received, 13 July 2000; revised, 27 December 2000; accepted, 8 January 2001.


Science and Engineering Ethics, Volume 7, Issue 2, 2001 261
members included five senior and widely respected DUT scientists, one DUT student and one external member representing industry. The Committee had to report directly to the Vice-Chancellor of DUT and worked from 1993 to 1996.

The ACE was asked to consider and to advise on two questions. The first question was the following: How might students at DUT be taught to identify and analyse ethical questions which are likely to arise in the context of their future professional activities as designers or researchers in industry or in academia? The second problem on which the ACE was asked to advise was: How might future discussions on ethical aspects of applied research on an institutional level be stimulated and organized in a systematic way.2

In 1993, the ACE thought it wise to advise on the second or what may be called the “educational” question first. By doing so it hoped to use the experience gained during that process to address the more delicate question related to the ethical aspects of applied research more effectively.

(2) Inductive strategy of the Advisory Committee on Ethics of DUT

It goes without saying that at DUT – the oldest and largest university of technology in the Netherlands – “hard” technology plays a central role. DUT’s mission is, like every other technological university, to train high quality engineers and to generate advanced technological knowledge, with an important role given to finding solutions for pressing technological and socio-economic problems. Moreover, in its strategy document (1994) Towards a new engagement, the Board of DUT also stated that (future) engineers must, in the context of their (future) professional activities, be capable of envisaging the (ethical) consequences of their actions.3 At a university in which “hard” technology is dominant, this policy-statement meant somewhat of a change in intellectual culture.

However, in the case of education, the systematic exploration of ethical questions which might arise in the professional activities of (future) engineers was regarded with some scepticism. As regards applied research it was met with outright suspicion. This scepticism was caused by doubts as to whether departments of DUT, having formal authority to decide on the content of their own curricula, would accept an addition to the already overloaded study-programmes. The problem of extra study-load was also considered as somewhat problematic by students themselves. However, the suspicion incited by bringing ethics to bear on applied research was the result of researchers’ apprehension of interference in their work by what they feared would be strict and repressive ethical guidelines.

The ACE recognized the scepticism and the suspicion with which their activities would be encountered. So an inductive strategy of convincing was called for, as opposed to a bureaucratic “top-down approach”. However, an additional reason to adopt this approach was the compatibility of such a strategy with the presently existing situation with regard to applied ethics in technology: a situation which was characterized by the ACE as one in which we can hardly rely on existing or “traditional” moral canons, which were not invented for the moral dilemmas forced