

GGC5006 Ethics in Engineering and Research

Assignment #1

Due Date: 7 Oct 2025

1. Identify the moral values, issues, and dilemmas, if any, involved in the following cases, and explain why you consider them moral values and dilemmas.
 - (a) An engineer notified his firm that for a relatively minor cost a flashlight could be made to last several years longer by using a more reliable bulb. The firm decides that it would be in its interests not to use the new bulb, both to keep costs lower and to have the added advantage of "built-in obsolescence" so that consumers would need to purchase new flashlights more often.
 - (b) A linear electron accelerator for therapeutic use was built as a dual-mode system that could either produce X-rays or electron beams. It had been in successful use for some time, but every now and then some patients received high overdoses, resulting in painful after-effects and several deaths. One patient on a repeat visit experienced great pain, but the remotely located operator was unaware of any problem because of lack of communication between them: The intercom was broken, and the video monitor had been unplugged. There also was no way for the patient to exit the examination chamber without help from the outside, and hence the hospital was partly at fault. On cursory examination of the machine, the manufacturer insisted that the computerized and automatic control system could not possibly have malfunctioned and that no one should spread unproven and potentially libelous information about the design. It was the painstaking, day-and-night effort of the hospital's physicist that finally traced the problem to a software error introduced by the manufacturer's efforts to make the machine more user-friendly.
2. This question refers to case study of Citicorp Tower.

As soon as he identified the structural danger in the Citicorp building, should LeMessurier have notified the workers in the building, surrounding neighbors, and the general public who might do business in the building? Or was it enough that he made sure evacuation plans were in place and that he was prepared to provide warning to people affected in the event of a major storm?

3. Michael Davis defines professions as follows: "A profession is a number of individuals in the same occupation voluntarily organized to earn a living by openly serving a certain moral ideal in a morally permissible way beyond what law, market, and morality would otherwise require." He argues that carpenters, barbers, porters, and other groups who organize their work around a shared code of ethics should be recognized as professionals. Do you agree or disagree, and why?