



Al- Mustaqbal University College
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4th stage

Industrial Management and Ethics

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Lecture 8
Engineer's Ethics

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Engineer's Ethics

Engineering ethics is the field of applied ethics that is concerned with the decisions and actions of engineers, and the consequences of these actions and decisions, both individually and collectively. Engineering may be roughly understood as the activities that relate to the research, development, design, testing, maintaining, and scrapping of technology. Traditionally, engineering ethics often focused on engineering as a profession and the responsibilities and obligations of engineers as laid down in codes of ethics.

Most current codes of ethics address three main types of obligations and responsibilities of engineers, namely;

- 1) the eligible in carrying out of the profession, including upholding such moral values as honesty, integrity, competence, independence and impartiality.
- 2) acting as faithful and trustworthy agents to their clients and employers, including such values as loyalty, confidentiality and faithfulness.

3) meeting certain obligations towards the public, including holding paramount the safety, health and welfare of the public, serving the public interest, sustainability and social responsibility.

Some moral issues in engineering

Below five ethical issues are discussed that have received much attention in engineering ethics, in particular when a professional approach is followed: whistle-blowing, loyalty, conflicts of interest, risk and safety, and environmental care and sustainability.

Whistle-blowing كشف الفساد

Whistle-blowing could be defined as: making public of certain abuses within in an organization by an employee against the will (or order) of his or her direct superiors, and with an eye to remedying these abuses or informing the proper authorities or the public about these abuses.

Whistle-blowing can be internal in the organization and also outside the company; in the latter case, it can address for example authorities, the media or the public.

Whistle-blowing is of course not unique to engineering, but there are a number of reasons why it is relevant in engineering and has received quite some attention. One reason is that engineers may due to their specialized

knowledge and skills have knowledge of risks and adverse effects of certain technologies or of certain engineering projects that others do not possess. Secondly, engineers may be caught in a conflict between serving the interests of their employer and serving the public interest.

Also more generally, whistle-blowing is not the best way to deal with ethical issues in engineering. This may require further organizational and institutional reforms *اصلاحات*; in addition, it requires that engineers possess the skills to discuss ethical issues with managers, clients *العملاء* , stakeholders *أصحاب المصلحة* and the public.

Loyalty

Codes of ethics of engineering societies often state that engineers should be loyal to their employers and clients. For example, the code of conduct of the National Society for Professional Engineers (NSPE) in the US states that engineers “shall act for each employer or client as faithful agents or trustees” (NSPE 2007). This loyalty may conflict *يتضارب* with the obligation *التزام* to serve the public interest. The NSPE code suggests that at least in some situation the latter obligation is more important. It for example states that “Engineers shall not complete, sign, or seal plans and/or specifications that are not in conformity with applicable

engineering standards. If the client or employer insists on such unprofessional conduct سلوك غير مهني , they shall notify the proper authorities and withdraw from further service on the project.

Conflicts of interest تضارب المصالح

A conflict of interest occurs if a professional has an interest that, would conflict with meeting his or her professional obligations (including the obligations to clients and employers) or would impair يضعف his or her professional judgement. First, the occurrence of a conflict of interest does not imply actual wrong-doing or not fulfilling one's professional obligations. Although apparent conflicts of interest do not imply moral wrong-doing, they may still undermine the objectivity موضوعية and trustworthiness مصداقية of professional engineers because the professional is in a situation that his professional judgement may be compromised, even if this does not actually occur. Also apparent conflicts of interest are therefore best avoided.

Second, not any case of conflicting interests is a conflict of interest in the sense of the definition above. Rather the term refers to a potential impairment محتمل of someone's judgment or a compromising of someone's obligations (أو التنازل عن التزامات) as a professional. Third, the

interest that can conflict with the professional judgment or obligations should be understood broadly على نطاق واسع ; it can be a professional interest, but also a personal interest; and it can also include influences, loyalties that are perhaps strictly speaking not interests but that nevertheless may impair someone's professional judgement.

Conflicts of interest can take different forms in engineering; an example of a clearly unacceptable conflict of interest is bribery الرشوة ; but there are also less clear-cut cases, for example when it comes to accepting gifts.

Conflicts of interest may also occur if, for example, company engineers serve on a standardization committee whereas the company may have an interest in certain standards rather than others being accepted. In general, it is best to avoid conflicts of interest. Apart from avoiding conflicts of interest and disclosure, there may be other strategies to properly deal with conflicts of interest, like for example withdrawing from the decision-making process or independent review of certain engineering decisions or judgements.

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