

CT3112: Professional Skills – Ethics component

Lecturer: Dr Orla Richardson

U. of G. Discipline of Philosophy

Week 9: Lecture 2 – General Issues in Engineering Ethics

Video 1: Recap & Ethical decision-making

Duration:

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Outline:

Week 9 Videos:

Professional Obligations and Responsibilities



Safety (workplace & public)

[conflict of interests, the role of engineers in relation to managers,
the role of engineers as managers, issues around confidentiality
and loyalty, whistle-blowing]

Ethics Component: Overview

Assessment

- Online Ethics MCQ
- 25 questions
- Worth 25 points
- MCQ release date: 15/03/24
- MCQ close date: 22/03/24

Last Time

Normative Theories

Options: Focus on your character (virtue ethics), focus on outcomes (consequentialism), focus on moral laws (deontology)



Focus on ethical issues that arise at work

Applied Ethics – Professional Ethics - Engineering Ethics

Focus on practical problems

Moral concerns and decisions that are specific to engineering practice

Resources for ethical decision-making beyond NT:

Ethical principles

Try to do Good. Minimise harm. Be just.
Have integrity. Respect others.

&

Professional codes

Codes of conduct created by professional associations

Reminder: What is the code for?

A code's function is to:

1) inspire technical and moral excellence

2) educate new members,

3) inform non-members about appropriate expectations,

4) set standards,

5) support professionals in decision-making

- when you are faced with a difficult moral decision refer to the code

- when you recognise that a colleague is acting inappropriately refer to the code

Support the code!

Engineers should not only know the profession's code but support it by encouraging compliance and by criticizing those who fail to uphold it.

Why support the code?

- protects employees/professional and the general public from the negative consequences of morally problematic practice
- helps create a working environment where pressure to compromise professional integrity is easier to resist
- means doing your part in generating benefits (respect etc.,) for all engineers.

Reminder of our primary method

Case Studies



- Case studies are a highly successful means of demonstrating the ethical problems that could be experienced in professional work environments.
- Reflection on realistic cases
- Helps develops ethical decision-making skills by putting you in the situation and asking you to decide what should be done.

Ethical Decision-making model:



1. Evaluate all the information you have
2. Consider how your decision might affect all of the relevant stakeholders.
3. Consider what ethical principles and/or professional codes matter for the situation. [Consider also the legal implications of your actions.]
4. Determine the best course of action that reflects your values and the stakeholders' interests.
5. Be prepared to change your mind or admit error (if new information emerges or mistakes are made)
6. Continue to reflection on decision-making in preparation for next time

Reflecting on Ethical Decision making:

Case Study 6: Testing a product

Question: Should you be prepared to professionally guarantee a product when there is still one 'test' left to run?



Ask:

- What ethical principles matter here?
- Could you be violating a professional code of conduct?
- If there is a compromise (of ethical principle/code) at play here, can it be justified?

Reflecting on Ethical Decision making:

Case Study 7: Information Request

Think:

Your legal obligations may not have the same scope as your ethical obligations. Is doing the right thing just about legal accountability?



Ask:

- What ethical principles matter here?
- Could you be violating a professional code of conduct?
- Can you justify destroying the records?

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Video 2: Safety – Society and Workplace

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Why does ethical decision-making matter?

- Engineers must be primed to always consider the impact of engineering activity because engineering professionals are *in service to society*.

Let's look at the code



Code of Ethics – basic tenets:

‘Members must act at all times with fairness, courtesy and good faith toward all persons with whom the member has professional dealings, and in **accordance with the public good**. A member’s obligations to the client can never override their **responsibility to the public good**, and members of Engineers Ireland should not enter undertakings which compromise this responsibility.

Members

must uphold the values of truth, honesty, and trustworthiness and

safeguard human life and welfare, and the environment.’

In keeping with these basic tenets, members must:

1. Hold paramount the safety, health, and welfare of the public; the protection of the environment; and the promotion of health and safety in the workplace;

Moral Obligation:

Given your particular situation, circumstance, or **role** you are

required to act in specific ways – certain things *must or must not be*

done for moral, legal, or institutional reasons.

Moral Responsibility:

Given your particular situation, circumstance, or **role** you are held

accountable (maintain)

Reflection:

Engineers and society

A kind of implicit social contract exists between engineers and society.



Safety – Product/Design/Application

One of the primary duties of engineers is to ensure that products or services are designed with **the safety of the public** in mind.



Principle: Do no harm

Criteria that ensures a **safe design**:

1. “the minimum requirement is that a design must comply with the applicable laws.”
2. “an acceptable design must meet the standard of accepted engineering practice.”
3. “alternative designs that are potentially safer must be explored.”
4. “the engineer must attempt to foresee potential misuses of
the product by the consumer and must design to avoid these problems.”

(Fleddermann, *Engineering Ethics*, p.65)

- **A safe design:**

- When engineers, managers, corporate owners, contractors, subcontractors and inspectors demand high levels of safety the entire engineering profession benefits. (Do Good)

- **Product liability Law**

PLL: body of legal rules that govern lawsuits for losses or injuries caused by defective products. Not caveat emptor but caveat venditor!



Liability For Defective Products Act, 1991

2.—(1) The producer shall be liable in damages in tort for damage caused wholly or partly by a defect in his product.

<https://www.irishstatutebook.ie/eli/1991/act/28/enacted/en/print#sec2>

A safe design: Product liability Law

Intersection between, engineering, law and ethics

Reflect: Product failure

Engineers must be properly educated in product liability law and the legal concept of an "unreasonably dangerous product,".



Engineers need to see the 'big picture' – be aware of what legal and ethical responsibilities they have for product safety even as a product progresses down the production chain.

- Establishing your legal responsibility — easy?
- Establishing your ethical responsibility – harder?

Workplace safety

Safety issues emerge when:

Obligated to ensure that all employees have appropriate training

- there is a lack of training and lack of supervision
- there is more emphasis on **productivity/profit** than the safety of workers.
- failure by employees to adhere to safety codes laid down by the company or to report failures or abuses of safety codes

Case study 8: One solution – greater ‘worker’ engagement (at all levels) in health and safety issues and clear lines of communication between employees, engineers and management. See Health and Safety Executive (GB) case study Heathrow Terminal 5 project. Link is on-line.

Reflecting on Safety: Code Enforcement

Case Study 9: Code Enforcement

Ethical trade-off:

Is righting a wrong with
another wrong ever acceptable?



Are you a deontologist or consequentialist?

Reflecting on Safety: Quality Control

Case Study 10: Quality control

Should the line engine stand by and let defect products 'go out the door'?



□ Is this case study really about the potential for ethical tensions to exist between managers and engineers?

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Video 3: Engineers and Managers

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Engineering Management aims: to create and maintain an environment in which individuals working together in groups successfully accomplish organisational or institutional objectives

Role:

- Managers focus on issues of efficiency and productivity
- Managers have obligations to the organisation/institution
- Managers often perceive themselves as having a special duty to protect the financial well-being of those organisations or institutions

Engineers have an obligation to protect the public.

An engineer might have to prioritise social responsibility

(public good) over loyalty to 'the company'.

Interpersonal conflict – you and your manager, you and more senior representatives of your company or institution

This potential conflict may even become more pronounced

\ The individual plays a **dual role**, and if there is an ethical conflict it will be internal, a conflict that plays out in virtue of the roles you play

Dual roles:

❑ In some professions, '**dual roles**' can be ethically problematic

In **Psychiatric Ethics**, for example, 'dual roles' are established when a relationship that includes **non-patient focused interests**

(e.g. contractual, social, sexual, or financial) exists and may interfere with beneficial treatment for the patient.

Examples:

- Military psychiatrists and combat-readiness

Might be in individual's best interests to be relieved of duty but not in the best interests of the military

- Forensic psychiatrists and public safety

Rehabilitation vs. recidivism risk

□ Engineers as managers - Dual Role?

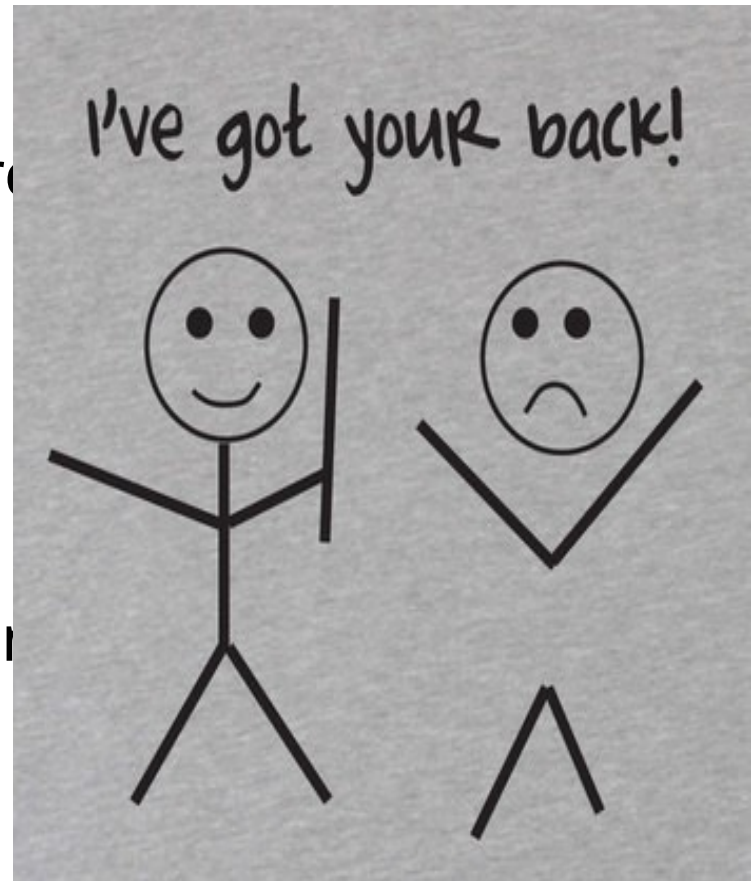
- Often a manager, even if she has engineering experience, is not as up to date on current engineering practices as practicing engineers.
- It is important that managers do not ignore their own engineering experience, or the expertise of their subordinate engineers.
- A difficult 'ethical balancing act' might be required.

Reflecting on Loyalty:

Case Study 11: Loyalty

What do you think loyalty requires?

Do you think that whatever a company (that you work for) wants to do with its products or whatever links it wants to form with other relevant stakeholders is simply not your business?



Documented cases of the disregard for ethical codes in engineering practice

Many major disasters, due to failure in design or negligence on the part of engineers or management have resulted in the loss of many human lives.

- The space shuttle *Challenger* disaster in 1986, which resulted in 7 deaths.
- The *Kansas City Hyatt-Regency Walkway* accident (1981) which caused the deaths of 114 people and 185 injured.
- Gulf Oil Spill: *Deepwater Horizon Disaster* 2010. 11 killed and 75 injured.

Reflecting on the space shuttle *Challenger* disaster (1986)

Case Study 12: Challenger

- Safety is the paramount consideration. The engineers could not say the launch would be safe. The launch should have been delayed.
- But engineering supervisor Robert Lund told to “Take off your engineering hat and put on your management hat.”
- Conflict of obligations: profit/politics/reputation before safety
- Attempted cover-up (by Morton Thiokol), Robert Boisjoly refuses to let this happen (considered to be a whistleblower) but
at great personal and professional cost

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Video 4: Whistle-blowing

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Few topics in Engineering Ethics are as controversial as **whistle-blowing**.

The term intends to be evocative - a shrill sharp sound, giving a warning of harm or call a halt to actions

Definition:

'The disclosure by organization members (former or current) of illegal, immoral and illegitimate practices under the control of their

employers to parties and organizations that may be able to effect

action'. (Miceli & Near, 1985 525)

Whistleblowing:

□ Very often the term is reserved for actions of disclosure that step outside of approved organizational channels to force attention to a significant moral issue.

➤ However, some definitions of Whistleblowing consider raising concerns

- to the 'wrongdoer',

- to other colleagues,

- to supervisors/local managers as a form of **internal whistleblowing**

□ More often we think of **Whistleblowing** as drawing *public* attention (rather than private or inner-institutional attention) to specific actions/practices that jeopardise public safety – illegal, immoral or illegitimate.

Whistleblowing: is alerting relevant persons to some moral or legal corruption in their position to act in response

- Governmental agencies or authorities.
- Professional organisations.
- If inaction here, forced to go public.

Whistle-blowing: The Basic Steps

Step 1: Is there a situation that could potential turn into a whistle-blowing incident?

Step 2: Seriousness test.

- Assess – is something illegal, immoral and/or illegitimate happening?
- Assess – is there a serious threat to public safety?

Step 3: Report to immediate manager/supervisor

Step 4: Report to upper management - senior managers, board of directors, owners.

Step 5: Going outside the organisation - going outside the organisation

usually means reporting concerns (with appropriate evidence trail) to governmental authorities and, if necessary, going public.

Whistle-blowing: The Basic Steps

Step 6: Living with the consequences - As a whistle-blower you must also be prepared to face the consequences of your actions

Whistleblowing is often done for relevant and important moral reasons but reactions to whistle-blowers can vary

Reactions:

- Appreciation
- Reactions of colleagues – perceived lack of trust or loyalty
- Potential harm to reputation within the profession
- Retaliation - loss of employment.

Whistle-blowing: A basic ethical dilemma happens when:

An engineer's duty (moral obligation) to ensure public health and safety (to report unsafe work practices, designs, products, processes but also, perhaps, abuses of power or gross

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Whistleblowing is about reducing harm/doing good, promoting justice, integrity, and honesty

Whistleblowing is perceived as breaking confidentiality, appearing disloyal, and harming the reputation of the profession

Whistle-blowing: Moral distress and Moral courage

Moral distress: You observe wrongdoing but feel unable to act

- organisational constraints (workplace culture)
- personal constraints (fear of consequences)

Moral courage: recognise that morally a certain action is required

of you, understand the potential negative consequences, yet still

act in accordance with professional ethical code and personal ethical values.

Question: Can moral courage be taught?

In the sense that it can be developed or strengthened by education and reflection?

The organisation and the whistleblower

A paradox for the organisation

Legally *and morally* an organisation is required to protect a whistleblower while the very actions of that whistleblower may destabilise or harm that organisation.

See the opportunity, protect the whistleblower not the status quo

Whistle-blowers may harm the organization in the short term, but they offer the opportunity to reform organisational practices that may already be harming professionals and professional reputations, the customers or clients of your organisation.

Given the potential negative implications of whistle-blowing, it is important that legal protections exist

❑ In Ireland there is the Protected Disclosures Bill 2014 as amended by the Protected Disclosures (Amendment) Act 2022.

This statutory framework offers protection to workers who make a protective disclosure from dismissal, penalisation or other sanctions by their employers.

❑ Free and independent supports are also available.

• Anyone can contact the free and confidential 'Speak Up' Helpline (1800 844 866) or use the Secure Report form, email, post or signal app which is operated by **Transparency International Ireland**.

Reflecting on Whistleblowing

Case Study 13: City Engineer

Has the engineer (Mario) in this case study made the right set of decisions?

Has he done enough to fulfil his moral obligations?

Be sure to read the Review from the Board of Assessment