

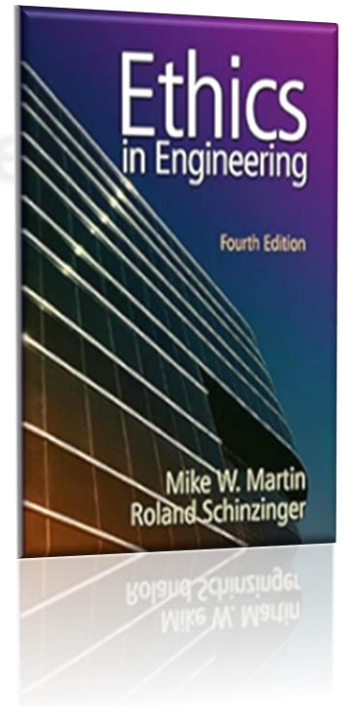
Engineering Ethics

(HSS-422)

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Department of Computer
Software Engineering
Karachi Campus

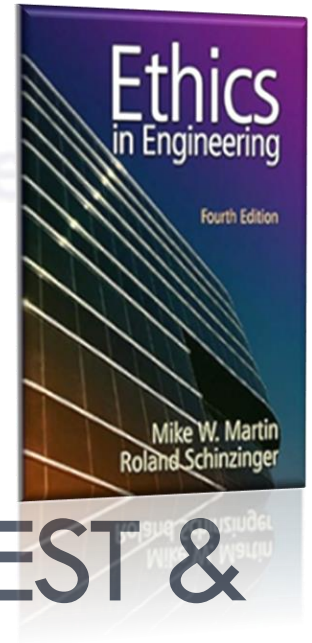


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CONFLICTS OF INTEREST & EXPERT WITNESSING: INFORMING THE PUBLIC

Week No 08

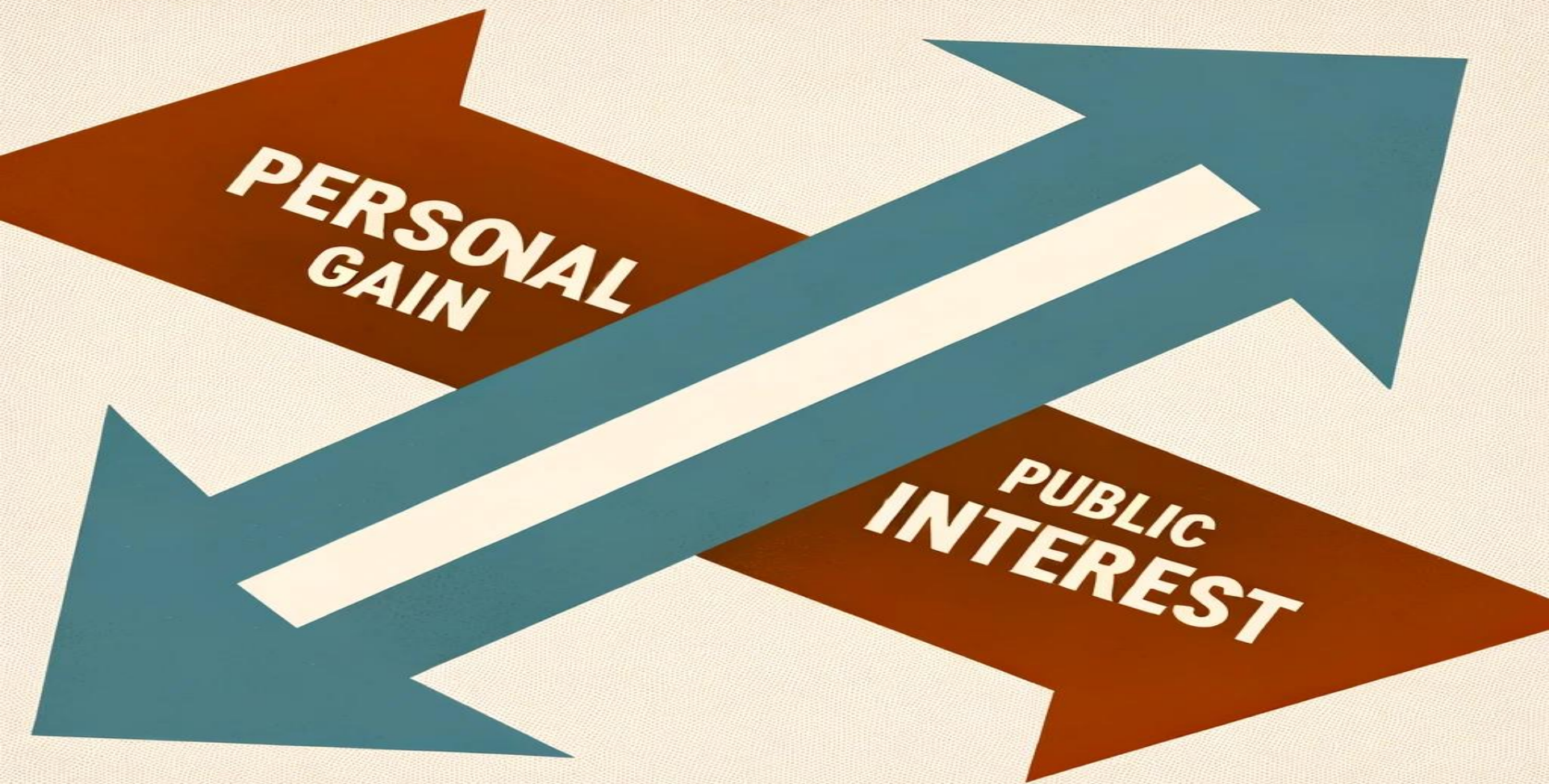
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Learning Outcomes

In this Lecture will cover ..

- To understand and Identify Conflicts of Interest in Engineering Practice.
- To analyze the Role and Ethical Obligations of Engineers as Expert Witnesses.
- To Develop Skills to Effectively Communicate and Inform the Public on Engineering Issues.
- To Evaluate and Resolve Ethical Conflicts in Expert Witnessing and Public Engagement.

CONFLICTS OF INTEREST & EXPERT WITNESSING



Understanding Conflicts of Interest

❖ **Background:**

- A conflict of interest occurs when an individual or organization is involved in multiple interests, one of which could possibly corrupt the motivation or decision-making of that individual or organization.
- In the context of engineering, a conflict of interest can arise when personal, financial, or professional obligations conflict with the engineer's duty to act in the best interests of public safety and welfare.

Understanding Conflicts of Interest

❖ Examples 01

- **Personal Gain vs. Public Safety:** An engineer may face a conflict of interest if they are offered financial incentives to approve a construction project that does not meet safety standards, putting personal gain in conflict with public safety.

Understanding Conflicts of Interest

❖ Example: 02

- **Company Loyalty vs. Environmental Responsibility:** An engineer working for a manufacturing company may discover that the company's operations are harming the environment.
- Reporting these findings could lead to costly penalties for the company, placing the engineer in a conflict between loyalty to the employer and environmental responsibility.

Understanding Conflicts of Interest

❖ Example: 03

- **Secondary Employment:** An engineer might work part-time as a consultant for a company that is a direct competitor of their full-time employer.
- This situation could lead to conflicts between the engineer's responsibilities to their employer and their consulting commitments.

Understanding Conflicts of Interest

❖ Example: 04

- **Intellectual Property Rights:** An engineer who invents a new technology while employed by a company may have a conflict of interest.
- If they wish to develop and market the technology independently, which could compete with the company's business interests.

Consequences of Conflicts of Interest

❖ Introduction:

- It can lead to dire consequences, affecting public trust and safety. These conflicts can compromise the integrity of engineering decisions, leading to substandard work, unethical practices, and, in extreme cases, disasters. Here's how conflicts of interest can have a significant impact:
 1. **Compromised Safety and Quality:**
 2. **Legal and Financial Repercussions:**
 3. **Erosion of Public Trust:**

Consequences of Conflicts of Interest

❖ **Case Study: The Hyatt Regency Walkway Collapse:**

- A tragic example of an engineering disaster influenced by a conflict of interest is the Hyatt Regency walkway collapse in 1981.
- This incident occurred in Kansas City, Missouri, where two suspended walkways collapsed during a public event, killing 114 people and injuring over 200.

Consequences of Conflicts of Interest

❖ **Case Study: The Hyatt Regency Walkway Collapse:**

- **Conflict of Interest:** The engineering firm responsible for the project faced immense pressure to reduce costs and speed up the construction process.
- This led to design changes that were not properly reviewed or tested for safety.
- The decision to alter the walkway's design for expediency and cost reduction, without thorough
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Consequences of Conflicts of Interest

❖ **Case Study: The Hyatt Regency Walkway Collapse:**

- The decision to alter the walkway's design for expediency and cost reduction, without thorough safety evaluations, demonstrated a conflict between financial incentives and professional responsibility to ensure public safety.
- ***Impact on Public Trust and Safety:*** The disaster had a profound impact on public trust in engineering standards and practices.

Consequences of Conflicts of Interest

❖ **Case Study: The Hyatt Regency Walkway Collapse:**

- ***Impact on Public Trust and Safety:***
- It highlighted the need for stringent ethical guidelines and regulatory oversight in engineering to prevent such tragedies.
- The incident led to significant changes in engineering codes and standards, emphasizing the importance of ethical responsibility and accountability in the profession.

Role of Expert Witnesses in Engineering

❖ Definition:

- An expert witness is an individual with specialized knowledge, skills, experience, training, or education that goes beyond what is considered ordinary.
- In the legal system, expert witnesses are called upon to provide expert opinions, analyses, or testimony in court cases or legal proceedings.
- Their role is to help judges and juries understand complex technical issues that are pivotal to the case.

Role of Expert Witnesses in Engineering

❖ **Role of Expert Witness in the Legal System:**

- **Providing Expertise:** Expert witnesses use their specialized knowledge to interpret facts, analyze evidence, and provide opinions that can shed light on technical aspects of a case.
- **Testifying in Court:** They may testify in court, explaining technical concepts in a way that is understandable to those without their specialized knowledge, such as jurors or judges.

Role of Expert Witnesses in Engineering

❖ **Role of Expert Witness in the Legal System:**

- **Objective Analysis:** Expert witnesses are expected to provide objective, unbiased opinions based on their expertise, regardless of the party that has engaged their services.
- **Assisting in Case Preparation:** Beyond testifying, they can assist legal teams in understanding the technical nuances of a case, helping to formulate legal arguments, or evaluate the opposition's claims.

Ethical Challenges for Expert Witnesses

❖ **Background:**

- Expert witnesses face various ethical challenges in their role, particularly regarding conflicts of interest and balancing professional integrity with advocacy.
- These challenges are critical to address to maintain the credibility and trustworthiness of the judicial process.
 1. Potential Conflicts of Interest for Expert Witnesses:
 2. Balancing Professional Integrity with Advocacy:

Ethical Challenges for Expert Witnesses

❖ **Potential Conflicts of Interest for Expert Witnesses:**

- Expert witnesses face conflicts of interest from substantial fees and the desire for profitable client relationships, risking biased testimony. Pre-existing relationships and concerns over reputation and future business may compromise their impartiality.
- Additionally, intellectual biases towards personal theories or methods can skew their fact analysis and presentation.

Ethical Challenges for Expert Witnesses

❖ **Balancing Professional Integrity with Advocacy:**

- Expert witnesses must balance objectivity with persuasiveness in their testimony, adhering to ethical standards and managing client expectations, while maintaining confidentiality and transparency about conflicts of interest.
- Their role is to provide honest, independent opinions based on scientific and technical principles, regardless of client implications.

Informing the Public Ethically

❖ **Background:**

- Ethical communication to the public is a cornerstone of engineering practice. Engineers have a responsibility not only to ensure the safety, health, and welfare of the public but also to inform and educate the public about engineering projects and their potential impacts.
- This responsibility encompasses several key aspects:

Informing the Public Ethically

❖ **Background:**

1. Responsibility of Engineers to Inform and Educate the Public:
 - ✓ Public Safety and Awareness.
 - ✓ Community Engagement.
 - ✓ Education and Outreach.
2. Transparency and Honesty in Public Communications:
 - ✓ Disclosure of Information.
 - ✓ Avoiding Misinformation.
 - ✓ Conflict of Interest Disclosure.

Case Study: Ethical Expert Witnessing in the Volkswagen Emissions Scandal



Ethical Challenges for Expert Witnesses

❖ Real-life Example of Ethical Dilemma:

- The Volkswagen (VW) emissions scandal, also known as "Dieselgate," involved the company installing software in diesel engines to cheat on emissions tests.
- Engineering experts were brought in as witnesses to testify about the software's purpose and impact on emissions.

Ethical Challenges for Expert Witnesses

❖ **Real-life Example of Ethical Dilemma:**

- An ethical dilemma arose when these experts had to decide whether to report their findings truthfully, which could harm VW's reputation and financial standing, or to downplay the severity to protect the company and their own professional relationships.

Ethical Challenges for Expert Witnesses

❖ Discussion of the Ethical Choices Made:

- **Truthful Reporting:** Some engineering experts chose to uphold their ethical duty by reporting the true extent of the emissions manipulation, despite potential repercussions for VW and possible conflicts with their own interests.
- Their testimony played a crucial role in revealing the truth to the public and regulatory authorities.
- **Professional Integrity:** These experts prioritized professional integrity and public safety over –
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Ethical Challenges for Expert Witnesses

❖ **Discussion of the Ethical Choices Made:**

- **Professional Integrity:** These experts prioritized professional integrity and public safety over personal gain or loyalty to VW. By doing so, they helped uncover one of the largest corporate frauds in automotive history.
- **Impact on Public Trust:** The decision to testify truthfully restored some level of public trust in the engineering profession and emphasized the importance of ethical standards in expert witnessing.

Best Practices for Managing Conflicts of Interest



Ethical Challenges for Expert Witnesses

❖ **Strategies for Identifying and Mitigating Conflicts of Interest:**

- Disclosure and Transparency.
- Regular Assessments.
- Separation of Duties.

❖ **Guidelines for Ethical Expert Witnessing:**

- **Maintain Objectivity:** Always base testimony on objective analysis and factual evidence, avoiding any bias or influence from external parties.

Ethical Challenges for Expert Witnesses

❖ **Guidelines for Ethical Expert Witnessing:**

- **Uphold Professional Standards:** Adhere to the ethical standards of the engineering profession, including integrity, accuracy, and reliability in all expert witness activities.
- **Continual Education:** Stay updated with the latest developments in your field and in ethical expert witnessing practices to ensure informed and responsible testimony.



Thanks

Any Question

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