Engineering Ethics (HSS-422) (3+0)

Department of Computer Software Engineering Karachi Campus
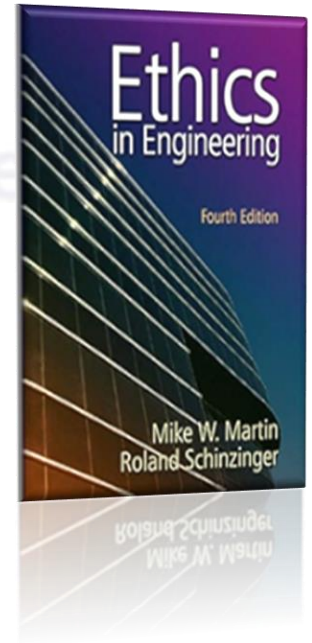
Ethics in Engineering
Fourth Edition
Mike W. Martin
Roland Schinzinger
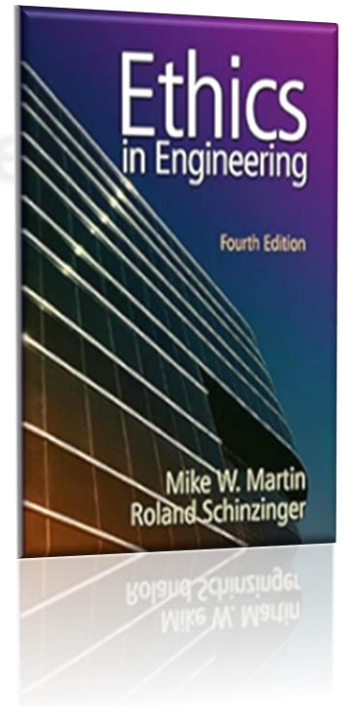
ENGR. SYED RIZWAN ALI
Assistant Professor,
Head of Business Incubation Center,
Bahria University (Karachi Campus)

Department of Computer
Software Engineering
Karachi Campus

Ethics
in Engineering

Fourth Edition

Mike W. Martin
Roland Schinzinger

PAKISTAN ENGINEERING CODE OF ETHICS

Week No 05

By Engr. Syed Rizwan Ali

Learning Outcomes

In this Lecture will cover ..

- ☐ Understanding Ethical Frameworks in Software Engineering
- ☐ Analyzing Ethical Decision-Making in Practice:
- ☐ Understanding the Impact of Ethical Practices in the Workplace.
- ☐ Recognizing the Consequences of Neglecting Employee Health and Communication.
- ☐ Implementing Effective Strategies for Ethical Decision-Making and Stress Management.

Case Study – 01

Department of Computer & Software Engineering

Karachi Campus

ETHICAL DILEMMAS IN SOFTWARE ENGINEERING: A CASE STUDY - 01

Navigating Ethical Challenges with the ACM/IEEE/CS Principles

Ethical Dilemmas in SE: A Case Study – 01

❖ **Navigating Ethical Challenges with the ACM/IEEE/CS Principles:**

- Introduction: Ethical challenges faced by a software engineer named Alex in the development of a social networking platform.

- Applying the ACM/IEEE/CS Software Engineering Code of Ethics and Professional Practice.

Case Study – Example 01

❖ **The Scenario:**

- Alex, a software engineer, works on a social networking platform. They discover the platform's algorithm might promote extremist content.
- Facing pressure from leadership and ethical dilemmas across the development process.
- **Principle 1: Public**
- **Challenge:** Algorithm promotes extremist content.
- **Action:** Report and insist on modifying the algorithm.

Case Study – Example 01

❖ **Principle 2: Client and Employer:**

- **Challenge:** Pressure to launch despite flaws.
- **Action:** Communicate risks and suggest phased launch.

❖ **Principle 3: Product:**

- **Challenge:** Misleading marketing claims.
- **Action:** Advocate for transparency in marketing.

❖ **Principle 4: Judgment:**

- **Challenge:** Quick but unethical solutions.
- **Action:** Reject and explore ethical solutions.

Case Study – Example 01

❖ **Principle 5: Management:**

- **Challenge:** Minimized testing to speed launch.
- **Action:** Stress importance of testing and quality assurance.

❖ **Principle 6: Profession:**

- **Challenge:** Use of proprietary code from a competitor.
- **Action:** Discuss ethical practices and consequences.

❖ **Principle 7: Colleagues:**

- **Challenge:** New team member struggling.
- **Action:** Offer mentorship and support.

Case Study – Example 01

❖ **Principle 8: Self:**

- **Challenge:** Stress and burnout.
- **Action:** Discuss workload and seek support.

❖ **Conclusion:**

- By adhering to the ACM/IEEE/CS principles, Alex can address ethical challenges in software development, ensuring integrity, transparency, and a commitment to the public good.

Case Study – 02

Department of Computer & Software Engineering Karachi Campus

ENGINEERING ETHICS IMPLEMENTATION IN A UAE-BASED SOFTWARE HOUSE – CASE STUDY 02

A case study on TechSolutions

Engineering Ethics Implementation

❖ **Background:**

- TechSolutions, a leading software development company in the United Arab Emirates (UAE), specializes in providing IT solutions globally.

- Focus on quality, innovation, and ethical practices, it prioritizes employee safety, transparent communication, and fair workload distribution. It is committed to ethical decision-making, professional development, and environmental sustainability, ensuring compliance with relevant laws and regulations.

Ethical Codes Implemented

- Prioritize Human Safety and Well-being
- Transparent Communication
- Fair Workload Distribution
- Respect for Privacy
- Ethical Decision-Making
- Professional Development
- Environmental Responsibility
- Compliance with Laws and Regulations

Scenario

- Mr. Ali, a software engineer, faced a critical project with tight deadlines, working under project manager Ms. Maria.

- Challenges in managing project timelines and unclear communication led to increased stress and workload for Mr. Ali.
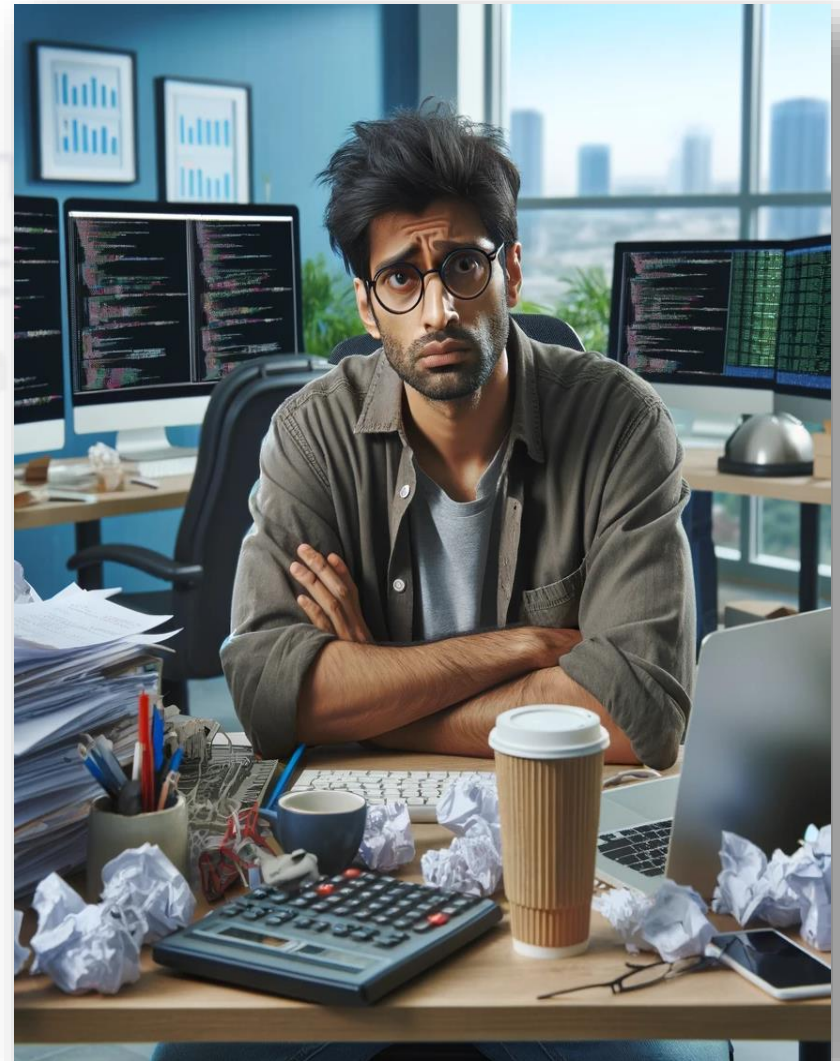
Incident

- Due to intense workload and stress, Mr. Ali experienced severe health issues, resulting in a hospitalization due to a brain hemorrhage.

- This raised concerns about work-related stress and employee health at TechSolutions.

Ethical Analysis

- The incident with Mr. Ali highlighted the need for prioritizing employee health, improving communication.

- And ethical responsibility to prevent work-related stress.

Resolution and Lessons Learned

- TechSolutions implemented health and wellness programs, communication training, workload assessments,

- And reviewed ethical guidelines to prevent future incidents.
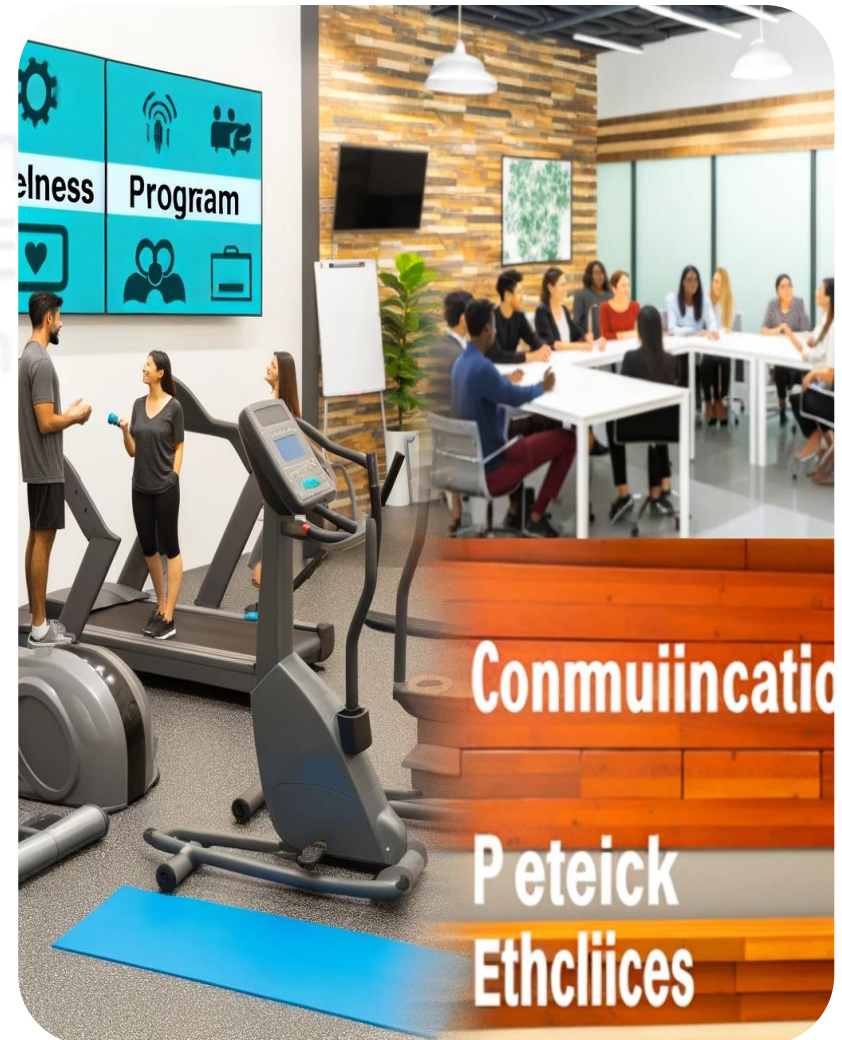
Conclusion

- The case of Mr. Ali emphasizes the importance of adhering to engineering ethics.

- Addressing work-related stress and ensuring employee health and well-being.

Thanks
Any Question
?????