

ELE 491

Senior Design Project Proposal

These slides are loosely based on the book Design for Electrical and Computer Engineers by Ford and Coulston. I have used the sources referenced in the book freely and without re-attribution. Please see the book for full source attribution



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Class 13 – Ethical and Legal
Issues

Ethics

Overview

- **Morals**
 - Common understanding of what is right and wrong
 - Group dependent
- **Ethics**
 - Choices made by individuals as they relate to Morals and to others

Ethics

IEEE

We, the members of the IEEE, in recognition of the importance of our technologies in affecting the quality of life throughout the world, and in accepting a personal obligation to our profession, its members and the communities we serve, do hereby commit ourselves to the highest ethical and professional conduct and agree:

1. to accept responsibility in making decisions consistent with the safety, health, and welfare of the public, and to disclose promptly factors that might endanger the public or the environment;
2. to avoid real or perceived conflicts of interest whenever possible, and to disclose them to affected parties when they do exist;
3. to be honest and realistic in stating claims or estimates based on available data;
4. to reject bribery in all its forms;
5. to improve the understanding of technology; its appropriate application, and potential consequences;
6. to maintain and improve our technical competence and to undertake technological tasks for others only if qualified by training or experience, or after full disclosure of pertinent limitations;
7. to seek, accept, and offer honest criticism of technical work, to acknowledge and correct errors, and to credit properly the contributions of others;
8. to treat fairly all persons and to not engage in acts of discrimination based on race, religion, gender, disability, age, national origin, sexual orientation, gender identity, or gender expression;
9. to avoid injuring others, their property, reputation, or employment by false or malicious action;
10. to assist colleagues and co-workers in their professional development and to support them in following this code of ethics.

Src: IEEE

Legal

Intellectual Property

- Intellectual Property (IP)
 - Types
 - Patents
 - Trade Secrets
 - Copyrights
 - Nationalized
 - Big business
 - Mostly corporate
 - IP rights are assigned to your employer
 - \$10K-\$20K to patent an idea

Legal

Intellectual Property

- Patents
 - Utility patent – function
 - Design patent – look/feel
 - Based on first to conceive – not first to file
 - Engineering notebook
 - 20 year lifetime
 - Three requirements
 - Novel
 - Non-obvious
 - Trivial extension of existing technology
 - Common person test
 - Useful – reducible to practice

Legal

Intellectual Property

- Patents
 - Content
 - Prior art citation
 - Patents – www.uspto.gov
 - Papers – IEEE, ACM, ...
 - Publications – Books, articles, ...
 - Description of the invention
 - Overview of operation
 - How it can be reduced to practice
 - Claims
 - Legal description of the invention
 - Identification of unique parts of the design

Legal

Intellectual Property

- Patents

<http://www.uspto.gov/dashboards/patents/main.dashxml>

Legal Liability

- Tort
 - Wrongful act
 - Basis for civil law suits
- Liability
 - Responsible for tortious act
 - Negligence
 - Have a duty to follow reasonable standards and rules
 - Breach of duty
 - Plaintiff is harmed
 - Harm was due to breach
 - Strict Liability
 - Product was dangerous or defective
 - Defect existed when it left the manufacturer
 - Defect caused harm to someone
 - Harm was due to defect

Ethics + Legal Decisions

- When faced with a dilemma:
 - Is it legal?
 - Not always a yes/no answer
 - Is it safe?
 - Normal operation
 - Misused
 - Abused
 - Is it ethical
 - Public harm?
 - Customer harm?
 - Company harm?
 - Financial
 - Reputation

Ethics + Legal Decisions

- When faced with a dilemma:
 - If the answers are not clear
 - or
 - If you disagree with the consensus
 - or
 - You just are not sure
 - Discuss with Management
 - Discuss with Legal
 - Discuss with HR
 - Most big companies have a neutral (sometimes anonymous) process to allow you to share your concerns

In Class Activity