

Real Ethical Cases In Engineering

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Tool and Manufacturing Engineers Handbook: Manufacturing Management
Engineering Ethics in Practice
What Every Engineer Should Know about Ethics
Emerging Technologies and Ethical Issues in Engineering

Beyond Failure

Engineering Ethics: Concepts and Cases

Engineering Ethics

Introduction to Engineering Ethics

Bridging the gap between theory and practice, ENGINEERING ETHICS: CONCEPTS AND CASES, 5E, International Edition, will help you quickly understand the importance of your conduct as a professional and how your actions can affect the health, safety, and welfare of the public. ENGINEERING ETHICS: CONCEPTS AND CASES, 5E, International Edition, provides dozens of diverse engineering cases and a proven and structured method for analyzing them; practical application of the Engineering Code of Ethics; focus on critical moral reasoning as well as effective organizational communication; and in-depth treatment of issues such as sustainability, acceptable risk, whistle-blowing, and globalized standards for engineering. Additionally, a new companion website offers study questions, self-tests, and additional case studies.

Engineering Ethics

Engineers and ethicists participated in a workshop to discuss the responsible

development of new technologies. Presenters examined four areas of engineering--sustainability, nanotechnology, neurotechnology, and energy--in terms of the ethical issues they present to engineers in particular and society as a whole. Approaches to ethical issues include: analyzing the factual, conceptual, application, and moral aspects of an issue; evaluating the risks and responsibilities of a particular course of action; and using theories of ethics or codes of ethics developed by engineering societies as a basis for decision making. Ethics can be built into the education of engineering students and professionals, either as an aspect of courses already being taught or as a component of engineering projects to be examined along with research findings. Engineering practice workshops can also be effective, particularly when they include discussions with experienced engineers. This volume includes papers on all of these topics by experts in many fields. The consensus among workshop participants is that material on ethics should be an ongoing part of engineering education and engineering practice.

Global Engineering Ethics

For most professions, a code of ethics exists to promote positive behavior among practitioners in order to enrich others within the field as well as the communities they serve. Similar to the medical, law, and business fields, the engineering discipline also instills a code of ethical conduct. Contemporary Ethical Issues in Engineering highlights a modern approach to the topic of engineering ethics and the current moral dilemmas facing practitioners in the field. Focusing on key issues, theoretical foundations, and the best methods for promoting engineering ethics from the pre-practitioner to the managerial level, this timely publication is ideally designed for use by engineering students, active professionals, and academics, as well as researchers in all disciplines of engineering.

Engineering Ethics

Engineering News

A collection of important recent work on the counterfactual analysis of causation.

The Case against Perfection

Citrus

CD-ROM contains: Professional society codes -- Additional cases and materials -- Links to some major on-line ethics sites -- Ethos System from Taknosys (software).

Adviser, Teacher, Role Model, Friend

"In SOCIAL, ETHICAL, AND POLICY IMPLICATIONS OF ENGINEERING, engineers, faculty, and students will find an informative guide to the professional, societal, and ethical responsibilities that face practicing engineers today. Through an integrated approach to the theory of engineering ethics and practical real-world issues,

this comprehensive book offers readers an in-depth analysis of technology's current social role. Drawing on readings and case studies first published in IEEE Technology and Society Magazine, this easy-to-read text will develop readers' understanding of the important issues surrounding "macroethical" public policy debates, including discussions of sustainable development, public health, risk and product liability, and telecommunications. These cases and readings also provide an opportunity to apply the theory in real-world situations. SOCIAL, ETHICAL, AND POLICY IMPLICATIONS OF ENGINEERING will help students meet the new accreditation criteria for engineering adopted by the Accreditation Board for Engineering and Technology (ABET). In addition, contemporary issues presented in this far-reaching book will allow students and practicing engineers to gain greater insight into how social and ethical concerns shape contributions to the engineering field. For more information and related articles go to www4.ncsu.edu/unity/users/j/jherkert/jrh.html Professors: To request an examination copy simply e-mail collegeadoption@ieee.org." Sponsored by: IEEE Social Implications of Technology Society

Professional Ethics and Human Values

In a world permeated by digital technology, engineering is involved in every aspect of human life. Engineers address a wider range of design problems than ever before, raising new questions and challenges regarding their work, as boundaries between engineering, management, politics, education and art disappear in the face of comprehensive socio-technical systems. It is therefore necessary to review our understanding of engineering practice, expertise and responsibility. This book advances the idea that the future of engineering will not be driven by a static view of a closed discipline, but rather will result from a continuous dialogue between different stakeholders involved in the design and application of technical artefacts. Based on papers presented at the 2016 conference of the forum for Philosophy, Engineering and Technology (fPET) in Nuremberg, Germany, the book features contributions by philosophers, engineers and managers from academia and industry, who discuss current and upcoming issues in engineering from a wide variety of different perspectives. They cover topics such as problem solving strategies and value-sensitive design, experimentation and simulation, engineering knowledge and education, interdisciplinary collaboration, sustainability, risk and privacy. The different contributions in combination draw a comprehensive picture of efforts worldwide to come to terms with engineering, its foundations in philosophy, the ethical problems it causes, and its effect on the ongoing development of society.

Social, Ethical, and Policy Implications of Engineering

An examination of creative systems in structural and construction engineering taken from conference proceedings. Topics covered range from construction methods, safety and quality to seismic response of structural elements and soils and pavement analysis.

Human Genome Editing

Norbert Delatte presents the circumstances of important failures that have had far-reaching impacts on civil engineering practice, organized around topics in the engineering curriculum.

Causation and Counterfactuals

An engaging, accessible survey of the ethical issues faced by engineers, designed for students. The first engineering ethics textbook to use debates as the framework for presenting engineering ethics topics, this engaging, accessible survey explores the most difficult and controversial issues that engineers face in daily practice. Written by a leading scholar in the field of engineering and computer ethics, Deborah Johnson approaches engineering ethics with three premises: that engineering is both a technical and a social endeavor; that engineers don't just build things, they build society; and that engineering is an inherently ethical enterprise.

Ethical Issues in Engineering Design; Safety and Sustainability

Case Studies in Mechanical Engineering: Decision Making, Thermodynamics, Fluid Mechanics and Heat Transfer Stuart Sabol, Engineering Manager - Power Engineering at Power, Energy - USA Using a case study approach, this reference tests the reader's ability to apply engineering fundamentals to real-world examples and receive constructive feedback. Case Studies in Mechanical Engineering provides real life examples of the application of engineering fundamentals. They relate to real equipment, real people and real decisions. They influence careers, projects, companies, and governments. The cases serve as supplements to fundamental courses in thermodynamics, fluid mechanics, heat transfer, instrumentation, economics, and statistics. The author explains equipment and concepts to solve the problems and suggests relevant assignments to augment the cases. Graduate engineers seeking to refresh their career, or acquire continuing education will find the studies challenging and rewarding. Each case is designed to be accomplished in one week, earning up to 15 hours of continuing education credit. Each case study provides methods to present an argument, work with clients, recommend action and develop new business. Key features:

- Highlights the economic consequences of engineering designs and decisions.
- Encourages problem solving skills.
- Application of fundamentals to life experiences.
- Ability to practice with real life examples.

Case Studies in Mechanical Engineering is a valuable reference for mechanical engineering practitioners working in thermodynamics, fluid mechanics, heat transfer and related areas.

Biomedical Ethics for Engineers

Purpose of this book is to provide a text and a resource for the study of engineering ethics and to help future engineers be prepared for confronting and resolving ethical dilemmas that they might encounter during their professional careers. It is part of Prentice Hall's ESource program, a comprehensive, customizable introductory engineering and computing library. Engineering professionalism; Ethical theories; Ethical problem solving techniques; Applications; and Codes of ethics of major engineering societies. For professionals in General

Engineering or Computer Science fields.

Moral Thinking

Biomedical Ethics for Engineers provides biomedical engineers with a new set of tools and an understanding that the application of ethical measures will seldom reach consensus even among fellow engineers and scientists. The solutions are never completely technical, so the engineer must continue to improve the means of incorporating a wide array of societal perspectives, without sacrificing sound science and good design principles. Dan Vallero understands that engineering is a profession that profoundly affects the quality of life from the subcellular and nano to the planetary scale. Protecting and enhancing life is the essence of ethics; thus every engineer and design professional needs a foundation in bioethics. In high-profile emerging fields such as nanotechnology, biotechnology and green engineering, public concerns and attitudes become especially crucial factors given the inherent uncertainties and high stakes involved. Ethics thus means more than a commitment to abide by professional norms of conduct. This book discusses the full suite of emerging biomedical and environmental issues that must be addressed by engineers and scientists within a global and societal context. In addition it gives technical professionals tools to recognize and address bioethical questions and illustrates that an understanding of the application of these measures will seldom reach consensus even among fellow engineers and scientists.

- Working tool for biomedical engineers in the new age of technology
- Numerous case studies to illustrate the direct application of ethical techniques and standards
- Ancillary materials available online for easy integration into any academic program

The Ethical Engineer

Featuring a wide range of international case studies, Ethics, Technology, and Engineering presents a unique and systematic approach for engineering students to deal with the ethical issues that are increasingly inherent in engineering practice. Utilizes a systematic approach to ethical case analysis -- the ethical cycle -- which features a wide range of real-life international case studies including the Challenger Space Shuttle, the Herald of Free Enterprise and biofuels. Covers a broad range of topics, including ethics in design, risks, responsibility, sustainability, and emerging technologies Can be used in conjunction with the online ethics tool Agora (<http://www.ethicsandtechnology.com>) Provides engineering students with a clear introduction to the main ethical theories Includes an extensive glossary with key terms

Engineering News-record

This compact reference succinctly explains the engineering profession's codes of ethics using case studies drawn from decisions of the National Society of Professional Engineers' (NSPE) Board of Ethical Review, examining ethical challenges in engineering, construction, and project management. It includes study questions to supplement general engineering survey courses and a list of references to aid practicing engineers in exploring topics in depth. Concentrating primarily on situations engineers encounter on a daily basis and offering pragmatic

answers to ethical questions, What Every Engineer Should Know About Ethics discusses recent headline-making disasters such as the Challenger explosion, the Chernobyl nuclear catastrophe, and the Hyatt-Regency Hotel collapse; considers the merits and drawbacks of professional codes of ethics; covers the application of the "committee approach" to specific cases; compares and contrasts ethical codes and personal values with alternative approaches to morality; defines professional licensing and registration and enumerates their prerequisites; outlines legal standards for liability; emphasizes the importance of communication, coordination, and documentation; includes a discussion of "whistleblowing;" defines the engineer's primary ethical responsibility; and more.

Professional Engineer

An exploration of the ethics of practical engineering through analyses of eighteen rich case studies The Ethical Engineer explores ethical issues that arise in engineering practice, from technology transfer to privacy protection to whistleblowing. Presenting key ethics concepts and real-life examples of engineering work, Robert McGinn illuminates the ethical dimension of engineering practice and helps students and professionals determine engineers' context-specific ethical responsibilities. McGinn highlights the "ethics gap" in contemporary engineering—the disconnect between the meager exposure to ethical issues in engineering education and the ethical challenges frequently faced by engineers. He elaborates four "fundamental ethical responsibilities of engineers" (FEREs) and uses them to shed light on the ethical dimensions of diverse case studies, including ones from emerging engineering fields. The cases range from the Union Carbide pesticide plant disaster in India to the Google Street View project. After examining the extent to which the actions of engineers in the cases align with the FEREs, McGinn recapitulates key ideas used in analyzing the cases and spells out the main lessons they suggest. He identifies technical, social, and personal factors that induce or press engineers to engage in misconduct and discusses organizational, legal, and individual resources available to those interested in ethically responsible engineering practice. Combining probing analysis and nuanced ethical evaluation of engineering conduct in its social and technical contexts, The Ethical Engineer will be invaluable to engineering students and professionals. Meets the need for engineering-related ethics study Elaborates four fundamental ethical responsibilities of engineers Discusses diverse, global cases of ethical issues in established and emerging engineering fields Identifies resources and options for ethically responsible engineering practice Provides discussion questions for each case

Case Studies in Mechanical Engineering

This guide offers helpful advice on how teachers, administrators, and career advisers in science and engineering can become better mentors to their students. It starts with the premise that a successful mentor guides students in a variety of ways: by helping them get the most from their educational experience, by introducing them to and making them comfortable with a specific disciplinary culture, and by offering assistance with the search for suitable employment. Other topics covered in the guide include career planning, time management, writing development, and responsible scientific conduct. Also included is a valuable list of

bibliographical and Internet resources on mentoring and related topics.

Engineering Ethics

Computers are already approving financial transactions, controlling electrical supplies, and driving trains. Soon, service robots will be taking care of the elderly in their homes, and military robots will have their own targeting and firing protocols. Colin Allen and Wendell Wallach argue that as robots take on more and more responsibility, they must be programmed with moral decision-making abilities, for our own safety. Taking a fast paced tour through the latest thinking about philosophical ethics and artificial intelligence, the authors argue that even if full moral agency for machines is a long way off, it is already necessary to start building a kind of functional morality, in which artificial moral agents have some basic ethical sensitivity. But the standard ethical theories don't seem adequate, and more socially engaged and engaging robots will be needed. As the authors show, the quest to build machines that are capable of telling right from wrong has begun. *Moral Machines* is the first book to examine the challenge of building artificial moral agents, probing deeply into the nature of human decision making and ethics.

Creative Systems in Structural and Construction Engineering

A real-world, problem-centered approach to engineering ethics, using case studies, for students and professionals.

The Future of Engineering

Contemporary Ethical Issues in Engineering

Laszlo traces the spectacular rise and spread of citrus across the globe, from southeast Asia in 4000 BC to modern Spain and Portugal, whose explorers introduced the fruit to the Americas. This book explores the numerous roles that citrus has played in agriculture, horticulture, cooking, nutrition, religion, and art.

Analysis, Synthesis, and Design of Chemical Processes

Contemporary Ethical Issues in Engineering

Breakthroughs in genetics present us with a promise and a predicament. The promise is that we will soon be able to treat and prevent a host of debilitating diseases. The predicament is that our newfound genetic knowledge may enable us to manipulate our nature—to enhance our genetic traits and those of our children. Although most people find at least some forms of genetic engineering disquieting, it is not easy to articulate why. What is wrong with re-engineering our nature? *The Case against Perfection* explores these and other moral quandaries connected with the quest to perfect ourselves and our children. Michael Sandel argues that the pursuit of perfection is flawed for reasons that go beyond safety and fairness. The

drive to enhance human nature through genetic technologies is objectionable because it represents a bid for mastery and dominion that fails to appreciate the gifted character of human powers and achievements. Carrying us beyond familiar terms of political discourse, this book contends that the genetic revolution will change the way philosophers discuss ethics and will force spiritual questions back onto the political agenda. In order to grapple with the ethics of enhancement, we need to confront questions largely lost from view in the modern world. Since these questions verge on theology, modern philosophers and political theorists tend to shrink from them. But our new powers of biotechnology make these questions unavoidable. Addressing them is the task of this book, by one of America's preeminent moral and political thinkers.

Engineering Ethics

Ethical practice in engineering is critical for ensuring public trust in the field and in its practitioners, especially as engineers increasingly tackle international and socially complex problems that combine technical and ethical challenges. This report aims to raise awareness of the variety of exceptional programs and strategies for improving engineers' understanding of ethical and social issues and provides a resource for those who seek to improve ethical development of engineers at their own institutions. This publication presents 25 activities and programs that are exemplary in their approach to infusing ethics into the development of engineering students. It is intended to serve as a resource for institutions of higher education seeking to enhance their efforts in this area.

Infusing Ethics into the Development of Engineers

Ethical and Environmental Challenges to Engineering

Engineers, corporate managers, project managers, and production managers will use Manufacturing Management to answer important planning questions, manage new systems and technologies, and to integrate design, engineering, and manufacturing to bring products to market faster at the most competitive cost. Volume 5 also helps you focus on management's role in quality programs such as setting objectives, monitoring outcomes, and how to make continuous quality improvements while reducing quality costs.

Moral Machines

"Process design is the focal point of chemical engineering practice: the creative activity through which engineers continuously improve facility operations to create products that enhance life. Effective chemical engineering design requires students to integrate a broad spectrum of knowledge and intellectual skills, so they can analyze both the big picture and minute details - and know when to focus on each. Through three previous editions, this book has established itself as the leading resource for students seeking to apply what they've learned in real-world, open-ended process problems. The authors help students hone and synthesize their design skills through expert coverage of preliminary equipment sizing,

flowsheet optimization, economic evaluation, operation and control, simulation, and other key topics. This new Fourth Edition is extensively updated to reflect new technologies, simulation techniques, and process control strategies, and to include new pedagogical features including concise summaries and end-of-chapter lists of skills and knowledge."--pub. desc.

Ethics, Technology, and Engineering

Genome editing is a powerful new tool for making precise alterations to an organism's genetic material. Recent scientific advances have made genome editing more efficient, precise, and flexible than ever before. These advances have spurred an explosion of interest from around the globe in the possible ways in which genome editing can improve human health. The speed at which these technologies are being developed and applied has led many policymakers and stakeholders to express concern about whether appropriate systems are in place to govern these technologies and how and when the public should be engaged in these decisions. Human Genome Editing considers important questions about the human application of genome editing including: balancing potential benefits with unintended risks, governing the use of genome editing, incorporating societal values into clinical applications and policy decisions, and respecting the inevitable differences across nations and cultures that will shape how and whether to use these new technologies. This report proposes criteria for heritable germline editing, provides conclusions on the crucial need for public education and engagement, and presents 7 general principles for the governance of human genome editing.

Ethics in Engineering Practice and Research

This book is a continuation of the enterprise which the author began with 'The Language of Morals and Freedom and Reason'. In the present work, R.M. Hare has fashioned, out of the logical and linguistic theses of his earlier books, a full-scale but readily intelligible account of moral argument.

Ethical Issues in Engineering Design; Safety and Sustainability

Global Engineering Ethics introduces the fundamentals of ethics in a context specific to engineering without privileging any one national or cultural conception of ethics. Numerous case studies from around the world help the reader to see clearly the relevance of design, safety, and professionalism to engineers. Engineering increasingly takes place in global contexts, with industrial and research teams operating across national and cultural borders. This adds a layer of complexity to already challenging ethical issues. This book is essential reading for anyone wanting to understand or communicate the ethics of engineering, including students, academics, and researchers, and is indispensable for those involved in international and cross-cultural environments. Takes a global-values approach to engineering ethics rather than prioritizing any one national or regional culture Uses engineering case studies to explain ethical issues and principles in relatable, practical contexts Approaches engineering from a business perspective, emphasizing the extent to which engineering occurs in terms of profit-driven markets, addressing potential conflicts that arise as a result Provides extensive

guidance on how to carry out ethical analysis by using case studies, to practice addressing and thinking through issues before confronting them in the world

Story-Based Inquiry: A Manual for Investigative Journalists

This is the first casebook to focus specifically on engineering and environmental ethics. It features full-length, multi-faceted, real-life cases of design and managerial dilemmas in a variety of settings--together with background readings that illustrate how one can integrate ethical and environmental challenges into engineering decisions, especially ones early in the design process. It presents the dilemmas as descriptively as possible--without revealing what the authors think are "proper" or "good" solutions--and encourages readers to think deeply about real-life situations and to engage in "moral imagination." CHALLENGES TO ENGINEERING DESIGN. Bell Telephone Design; Dow Corning Breast Implant Design; Carter Racing. ENVIRONMENTAL CHALLENGES FOR ENGINEERS. American Solar Network; Design Tex; Rohner Textil; Unilever; IKEA. ENGINEERING AND ENVIRONMENTAL CHALLENGES IN DEVELOPING COUNTRIES. W. R. Grace and the Development of NEEM; Bhopal; SELF; Solar Energy in South Africa; Eskom; Ghana Electrification Project. For Engineers, those who manage engineers, and those who wish to know more about how technology can address global problems.

Tool and Manufacturing Engineers Handbook: Manufacturing Management

Starrett, Lara, and Bertha provide in-depth analysis of real world engineering ethics cases studies with extended discussions and study questions.

Engineering Ethics in Practice

What Every Engineer Should Know about Ethics

For most professions, a code of ethics exists to promote positive behavior among practitioners in order to enrich others within the field as well as the communities they serve. Similar to the medical, law, and business fields, the engineering discipline also instills a code of ethical conduct. Contemporary Ethical Issues in Engineering highlights a modern approach to the topic of engineering ethics and the current moral dilemmas facing practitioners in the field. Focusing on key issues, theoretical foundations, and the best methods for promoting engineering ethics from the pre-practitioner to the managerial level, this timely publication is ideally designed for use by engineering students, active professionals, and academics, as well as researchers in all disciplines of engineering.

Emerging Technologies and Ethical Issues in Engineering

Packed with examples pulled straight from recent headlines, ENGINEERING ETHICS, Sixth Edition, helps engineers understand the importance of their conduct as professionals as well as reflect on how their actions can affect the health, safety and welfare of the public and the environment. Numerous case studies give

readers plenty of hands-on experience grappling with modern-day ethical dilemmas, while the book's proven and structured method for analysis walks readers step by step through ethical problem-solving techniques. It also offers practical application of the Engineering Code of Ethics and thorough coverage of critical moral reasoning, effective organizational communication, sustainability and economic development, risk management, ethical responsibilities, globalized standards for engineering and emerging challenges relating to evolving technology. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

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