

Ethics In Engineering Examples

A balanced, thought-provoking series of selected readings on professionalism and ethics in engineering. Addresses such topics as the concept of professionalism; education and maintenance of competence; registration; the role of professional and technical societies; professional autonomy; engineers' responsibilities for the social effects of engineering practice; whistle-blowing; and the formulation and enforcement of codes of ethics. Includes case studies of the ethical dilemmas faced in engineering practice, compilations of major codes of engineering ethics, and references for further reading.

This book compiles the latest strategies and information regarding civil engineering education, and the skills necessary for success that are tangential to engineering, including global perspectives, critical and design thinking skills, leadership skills, assessment, recruitment, retention, and more. It is designed so that each chapter can be used separately or in combination with other chapters to help enhance and foster student learning as well as promote the development of skills required for engineering practice. Features Includes overviews of successful academic approaches for each topic including implementation examples in every chapter Explains how assessment and the resulting data can be used for holistic evaluation and improvement of student learning Addresses the complexities of moral and professional ethics in engineering Highlights the importance of adopting a global perspective and the successful strategies that have been used or considered in educating resilient, globally minded engineers Compendium of Civil Engineering Education Strategies: Case Studies and Examples serves as a useful guide for engineering faculty, practitioners, and graduate students considering a career in academia. Academic faculty and working professionals will find the content helpful as instructional and reference material in developing and assessing career skills. It is also useful for intellectually curious students who want a deeper understanding and appreciation of the need for professional development and life-long learning.

This book is aimed at engineering academics worldwide, who are attempting to bring social justice into their work and practice, or who would like to but don't know where to start. This is the first book dedicated specifically to University professionals on Engineering and Social Justice, an emerging and exciting area of research and practice. An international team of multidisciplinary authors share their insights and invite and inspire us to reformulate the way we work. Each chapter is based on research and yet presents the outcomes of scholarly studies in a user oriented style. We look at all three areas of an engineering academic's professional role: research, teaching and community engagement. Some of our team have created classes which help students think through their role as engineering practitioners in society. Others are focusing their research on outcomes that are socially just and for client groups who are marginalized and powerless. Yet others are consciously engaging local community groups and exploring ways in which the University might 'serve' communities at home and globally from a post-development perspective. We are additionally concerned with the student cohort and who has access to engineering studies. We take a broad social and ecological justice perspective to critique existing and explore alternative practices. This book is a handbook for any engineering academic, who wishes to develop engineering graduates as well as technologies and practices that are non-oppressive, equitable and engaged. It is also an essential reader for anyone studying in this interdisciplinary juncture of social science and engineering. Scholars using a critical theoretical lens on engineering practice and education, from Science and Technology Studies, History and Philosophy of Engineering, Engineering and Science Education will find this text invaluable.

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 Challenges and Opportunities

Ethics, Politics, and Whistleblowing in Engineering

Emerging Technologies and Ethical Issues in Engineering

Engineering Professionalism and Ethics

Introduction to Engineering Ethics

This book focuses on the ethical issues in engineering that have to do with assessment, design, sustainability and globalization.

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.

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.

The first edition of Caroline Whitbeck's Ethics in Engineering Practice and Research focused on the difficult ethical problems engineers encounter in their practice and in research. In many ways, these problems are like design problems: they are complex, often ill defined; resolving them involves an iterative process of analysis and synthesis; and there can be more than one acceptable solution. In the second edition of this text, Dr Whitbeck goes above and beyond by featuring more real-life problems, stating recent scenarios and laying the foundation of ethical concepts and reasoning. This book offers a real-world, problem-centered approach to engineering ethics, using a rich collection of open-ended case studies to develop skill in recognizing and addressing ethical issues.

Ethical Engineering for International Development and Environmental Sustainability

Biomedical Ethics for Engineers

An Introduction

Engineering Ethics: Concepts and Cases

Ethics in Engineering

Engineering begins with a design problem: how to make occupants of vehicles safer, settle on an inter-face for an x-ray machine or create more legible road signs. In choosing any particular solution, engineers must make value choices. By focusing on the solving of these problems, Ethics Within Engineering shows how ethics is at the intellectual core of engineering. Built around a number of engaging case studies, Wade Robison presents real examples of engineering problems that everyone, engineer or not, will recognize, ranging from such simple artifacts as toasters and the layout of burners and knobs on a stove top to the software responsible for the Columbia airliner crash. The most dramatic examples center on error-provocative designs: designs that provoke mistakes for even the most intelligent, well-informed, and highly motivated. These examples all raise ethical issues, posing questions for the reader, forcing the give-and-take of discussion in classrooms and the consideration of alternative solutions that solve the original design problem without the unfortunate features of the original solution. This original, focused approach provides an ideal entry point for anyone looking to better understand professional ethical responsibilities within engineering.

This anthology focuses on ethical issues confronting individual engineers and the entire engineering profession.

Bridging the gap between theory and practice, ENGINEERING ETHICS, Fifth 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, Fifth 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. Available with InfoTrac Student Collections <http://gocengage.com/infotrac>. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Having enjoyed two highly successful previous editions, this text has been revised to coincide with the new directive by ABET (the Accrediting Board for Engineering and Technology) to expand the Ethics for Engineers course. The third edition can be used by freshmen studying the Introduction to Engineering course, or at the senior level, within the capstone design course.

Case Studies and Examples

What Every Engineer Should Know about Ethics

Ethics Within Engineering

Exemplary Education Activities and Programs

Papers from a Workshop

What is ethics in engineering? Engineers develop technology that has a major impact, positive and negative, on people and the environment. This means

that engineers must take a stand and make moral judgements. Also, they need to take other stakeholders into consideration employees, owners, customers and suppliers who might have conflicting interests. In this book a practical, hands-on process for handling ethical dilemmas is presented: awareness, responsibility, critical thinking and action. The author gives many examples from engineering areas ranging from construction to transhumanism. In a recurring case you as a reader think through each of the steps in the process: to develop or not develop the Life Partner. What is good and evil, right and wrong? That is the question.

Engineering Ethics is ideal for use in undergraduate engineering programs incorporating ethics topics. Engineering Ethics serves as both a textbook and a resource for the study of engineering ethics. It is written to help future engineers be prepared for confronting and resolving ethical dilemmas that they might encounter during their professional careers.

We all live our daily lives surrounded by the products of technology that make what we do simpler, faster, and more efficient. These are benefits we often just take for granted. But at the same time, as these products disburden us of unwanted tasks that consumed much time and effort in earlier eras, many of them also leave us more disengaged from our natural and even human surroundings. It is the task of what Gene Moriarty calls focal engineering to create products that will achieve a balance between disburdenment and engagement: &“How much disburdenment will be appropriate while still permitting an engagement that enriches one&’s life, elevates the spirit, and calls forth a good life in a convivial society?&” One of his examples of a focally engineered structure is the Golden Gate Bridge, which &“draws people to it, enlivens and elevates the human spirit, and resonates with the world of its congenial setting. Humans, bridge, and world are in tune.&” These values of engagement, enlivenment, and resonance are key to the normative approach Moriarty brings to the profession of engineering, which traditionally has focused mainly on technical measures of evaluation such as efficiency, productivity, objectivity, and precision. These measures, while important, look at the engineered product in a local and limited sense. But &“from a broader perspective, what is locally benign may present serious moral problems,&” undermining &“social justice, environmental sustainability, and health and safety of affected parties.&” It is this broader perspective that is championed by focal engineering, the subject of Part III of the book, which Moriarty contrasts with &“modern&” engineering in Part I and &“pre-modern&” engineering in Part II.

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.

Global Engineering Ethics

Ethics in Science and Engineering

Ethics, Technology, and Engineering

Environmental Ethics For Engineers

Infusing Ethics into the Development of Engineers

For engineering and scientific endeavors to progress there must be generally accepted ethical guidelines in place to which engineers and scientists must adhere. This book explores the various scientific and engineering disciplines, examining the potential for unethical behavior by professionals. Documented examples are presented to show where unethical behavior could have been halted before it became an issue. The authors also look to the future to see what is in store for professionals in the scientific and engineering disciplines and how the potential for unethical behavior can be negated.

A systematic guide to product design and safety from an ethical engineering perspective This hands-on textbook offers a holistic approach to product safety and engineering ethics across many products, fields, and industries. The book shows, step by step, how to “design in” safety characteristics early in the engineering process using design for product safety (DfPS) methods. Written by a P.E. and skilled educator with industry experience, Engineering Ethics and Design for Product Safety addresses all aspects of

the product system from the perspective of an active product-safety engineering manager. You will get detailed case studies, real-world examples, and side discussions that provide a deep dive into key topics. Coverage includes: Product safety Engineering ethics Product-safety components Hazards, risks, accidents, and outcomes A product-design process Product-safety engineering Engineering-design guidance Product-safety facilitators Product-safety engineering methods Product-safety defects and recalls Deep learning is often viewed as the exclusive domain of math PhDs and big tech companies. But as this hands-on guide demonstrates, programmers comfortable with Python can achieve impressive results in deep learning with little math background, small amounts of data, and minimal code. How? With fastai, the first library to provide a consistent interface to the most frequently used deep learning applications. Authors Jeremy Howard and Sylvain Gugger, the creators of fastai, show you how to train a model on a wide range of tasks using fastai and PyTorch. You'll also dive progressively further into deep learning theory to gain a complete understanding of the algorithms behind the scenes. Train models in computer vision, natural language processing, tabular data, and collaborative filtering Learn the latest deep learning techniques that matter most in practice Improve accuracy, speed, and reliability by understanding how deep learning models work Discover how to turn your models into web applications Implement deep learning algorithms from scratch Consider the ethical implications of your work Gain insight from the foreword by PyTorch cofounder, Soumith Chintala

An "ethics construction kit" places engineering in a new light.

Ethical Issues in Engineering

A Brief Introduction

Engineering, Business and Professional Ethics

Dictionary of Global Bioethics

Compendium of Civil Engineering Education Strategies

Moral problems that engineers may face in their professional lives are discussed, with particular reference to corporate settings. The authors place these issues within a philosophical framework & seek to exhibit the social importance & intellectual challenge of each one.

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.

The aim of this book is to generate a strong operational ethic in the work of engineers from all disciplines. It provides numerous examples of engineers who sought to meet the highest ethical standards, risking both professional and personal retaliations. In short, it presents the fields of engineering ethics in the context of actual conflict situations on the job, and points to an urgent need for a strong ethical framework for the profession. This book is about engineering students and practitioners truly understanding, valuing, and championing their wider critical role. Ralph Nader, the consumer advocate and champion of engineers, wrote the preface.

Digital classrooms have become a common addition to curriculums in higher education; however, such learning systems are only successful if students are properly motivated to learn. Optimizing Student Engagement in Online Learning Environments is a critical scholarly resource that examines the importance of motivation in digital classrooms and outlines methods to reengage learners. Featuring coverage on a broad range of topics such as motivational strategies, learning assessment, and student involvement, this book is geared toward academicians, researchers, and students seeking current research on the importance of maintaining ambition among learners in digital classrooms.

Engineering and Social Justice

In the University and Beyond

Ethics and Decision Making in Biomedical and Biosystem Engineering

Real World Case Studies
Ethics and Engineering

Engineering, as a profession and business, is at the sharp end of the ethical practice. Far from being a bolt on extra to the 'real work' of the engineer it is at the heart of how he or she relates to the many different stakeholders in the engineering project. Engineering, Business and Professional Ethics highlights the ethical dimension of engineering and shows how values and responsibility relate to everyday practice. Looking at the underlying value systems that inform practical thinking the book offers a framework for ethical decision-making. Covering global corporate responsibility to the increasing concern for the environment within the engineering business, the book offers ways in which value conflict can be handled. Integrating practice, value and diversity the book helps to prepare the engineer for the ethical challenges of the 21st century. This book is essential reading for all students on courses accredited by the Engineering Council e.g. Civil, Chemical, Mechanical and Environmental Engineering who need to be aware of ethics. Also of interest to practicing engineers and professionals such as Sustainability Managers and Community Workers involved in engineering projects. The authors have worked together in the area of engineering, professional and business ethics for many years and are all members of the National Centre for Applied Ethics at the University of Leeds. * Integrates ethical considerations into everyday decision-making * Shows how to review and overcome professional ethical problems * Practical case studies and examples throughout

"The aim of this book is to generate a strong operational ethic in the work of engineers from all disciplines. It provides numerous examples of engineers who sought to meet the highest ethical standards, risking both professional and personal retaliations. In short, it presents the fields of engineering ethics in the context of actual conflict situations on the job, and points to an urgent need for a strong ethical framework for the profession. This book is about engineering students and practitioners truly understanding, valuing, and championing their wider critical role. Ralph Nader, the consumer advocate and champion of engineers, wrote the preface."--Provided by publisher.

Ethics for Professionals: A Human Rights, Internationalist Perspective uses case studies and scenarios to educate engineering and other professionals and students about the role of ethics in the world of work. Using human rights as an international framework and a religiously neutral basis for ethics, this text focuses on honest ethics - people trying to be as ethical as possible given their actual work situations. Topics are broadly focused to reflect multicultural awareness. Examples of professional ethics challenges are chosen from around the world. The book includes contemporary issues such as outsourcing, considering sexual identity and orientation when hiring, and the new human rights legal framework, while retaining classic examples of ethical dilemmas in the practice of engineering, such as the Ford Pinto disaster, and addressing new challenges such as from information technology and self-driven cars. Ethics for Professionals increases students' awareness of the ethical questions they will encounter in their working lives and gives them the discernment and skills needed to deal with these issues. Dedicated to helping students learn about and implement ethical practices in their careers, Ethics for Professionals is well suited to any professional program where ethics is taught, particularly in engineering fields. S. Ratnajeewan H. Hoole holds a Ph.D. from Carnegie Mellon University and a D.Sc. degree with an emphasis in engineering from the University of London. A Fellow of the IEEE, he is a professor of electrical and computer engineering at Michigan State University and a pioneer in the teaching of human rights to engineers. On leave from Michigan State University, he is presently on the independent three-member Election Commission in Sri Lanka. India's Institution of Electronics and Telecommunication Engineers gave Professor Hoole its 2015 Gowri Memorial Gold Medal for his work on ethics for engineers. Mariyah Mahilmany Hoole is a program development consultant based in San Francisco, California, specializing in conflict resolution and the empowerment of women and youth. She has worked with local communities in South Asia, Africa, Europe, and the Middle East to strengthen practices of equality and human rights. Mariyah was educated at University of Pennsylvania and Columbia University. She has designed rights-based approaches for peace and equality for National Peace Council (Sri Lanka), Generations for Peace (Jordan), and is currently at Global Fund for Women in the United States. Dushyanthi Hoole earned her Ph.D. under George Olah from the University of Southern California, M.S. from Drexel University, and M.Sc. from the University of Colombo. Most recently, she served as a professor of chemistry and chemical engineering at Michigan State University. Prior to that, Dr. Hoole pioneered the first web-based course at the Open University of Sri Lanka, served on the National Education Council, and performed research and published works on children's and women's rights and equity issues with Save the Children, Plan International, and the National Science Foundation of Sri Lanka on Ethics in Scientific Research.

This book is a key introduction to ethics in engineering, providing professionals at all stages of their career with guidance on navigating the increasingly complex world of practising engineering ethically on an international scale. Engineering professionals face a duty to uphold reliable and trustworthy behaviour when working across all disciplines and industries. Accuracy and rigour are essential parts of the modern workplace, and are increasingly of

concern to practising engineers. Using case studies to highlight examples of issues within the workplace and how these can be appropriately handled, this book is an accessible tool through which engineers can gain confidence in dealing with ethical dilemmas in the workplace. Touching upon safety, risk, artificial intelligence, autonomous systems, and intellectual property, alongside sustainability and environmental matters, the book focuses on hot topics which are fast becoming day-to-day issues dealt with by engineers. The book will be suitable for engineers of all disciplines, alongside students looking to become professional chartered engineers.

Introduction to Engineering Library

A Guide for Engineers

The Ethical Engineer

Engineering Ethics in Practice

An "Ethics Construction Kit" Places Engineering in a New Light

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 We have used this book, manuscript form, as supplemental reading in our environmental engineering classes at Duke University. The discussion of ethics is usually reserved for the final few days of class, when the students should start asking so what? about course material. We respond to this question by covering the principles of ethics in one lecture and spending two or more sessions discussing various readings. Engineering students who have spent four years learning how to crunch numbers and to solve technical problems to three significant figures admit that the study of environmental ethics introduces new and exciting concepts into their professional thinking, and provides a perspective which otherwise would be missing from their education. Ensuring that their work has a positive influence on society is a responsibility and a privilege for engineers, but also a considerable challenge. This book addresses the ways in which engineers meet this challenge, working from the assumption that for a project to be truly ethical both the undertaking itself and its implementation must be ethically sound. The contributors discuss varied topics from an international and interdisciplinary perspective, including I robot ethics; I outer space; I international development; I internet privacy and security; I green branding; I arms conversion; I green employment; and I deliberate misinformation about climate change Important questions are answered, such as I what is meant by engineering ethics and its practical implications; I how decisions made by engineers in their working lives make an impact at the global as well as the local level; and I what ethics-related questions should be asked before making such decisions. Ethical Engineering for International Development and Environmental Sustainability will be a valuable resource for practising and student engineers as well as all who are interested in professional ethics, especially as it relates to engineering. Researchers and policy makers concerned with the effects of engineering decisions on environmental sustainability and international stability will find this book to be of special interest.

A broad, yet concise, introduction to the field of engineering for undergraduate students. Designed for the beginning student, this text covers the history of engineering, career paths for engineers, issues of professional responsibility and ethics, and critical engineering skills like problem solving and communication. Includes two case studies, one of which deals with the circumstances and events leading to the space shuttle Challenger accident. A brief, paperback text, this title can be used in conjunction with other texts to provide a solid foundation for the introductory engineering course.

An Industrial Perspective

Its Nature, Ethics, and Promise

Engineering Ethics

Ethics for Engineers

Ethics for Professionals: A Human Rights, Internationalist Perspective

This Dictionary presents a broad range of topics relevant in present-day global bioethics. With more than 500 entries, this dictionary covers organizations working in the field of global bioethics, international documents concerning bioethics, personalities that have played a role in the development of global bioethics, as well as specific topics in the field. The book is not only useful for students and professionals in global health activities, but can also serve as a basic tool that explains relevant ethical notions and terms. The dictionary

further the ideals of cosmopolitanism: solidarity, equality, respect for difference and concern with what human beings- and specifically patients - have in common, regardless of their backgrounds, hometowns, religions, gender, etc. Global problems such as pandemic diseases, disasters, lack of care and medication, homelessness and displacement call for global responses. This book demonstrates that a moral vision of global health is necessary and it helps to quickly understand the basic ideas of global bioethics.

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

Engineering Ethics is the application of philosophical and moral systems to the proper judgment and behavior by engineers in conducting their work, including the products and systems they design and the consulting services they provide. In light of the work environment that inspired the new Sarbanes/Oxley federal legislation on "whistle-blowing protections, a clear understanding of Engineering Ethics is needed like never before. Beginning with a concise overview of various approaches to engineering ethics, the real heart of the book will be some 13 detailed case studies, delving into the history behind each one, the official outcome and the "real story behind what happened. Using a consistent format and organization for each one—giving background, historical summary, news media effects, outcome and interpretation--these case histories will be used to clearly illustrate the ethics issues at play and what should or should not have been done by the engineers, scientists and managers involved in each instance. Covers importance and practical benefits of systematic ethical behavior in any engineering work environment Only book to explain implications of the Sarbanes/Oxley "Whistle-Blowing" federal legislation 13 actual case histories, plus 10 additional "anonymous" case histories-in consistent format-will clearly demonstrate the relevance of ethics in the outcomes of each one Offers actual investigative reports, with evidentiary material, legal proceedings, outcome and follow-up analysis Appendix offers copies of the National Society of Professional Engineers Code of Ethics for Engineers and the Institute of Electrical and Electronic Engineers Code of Ethics

The world population is growing, yet we continue to pursue higher levels of well-being, and as a result, increasing energy demands and the destructive effects of climate change are just two of many major threats that we face. Engineers play an indispensable role in addressing these challenges, and whether they recognize it or not, in doing so they will inevitably encounter a whole range of ethical choices and dilemmas. This book examines and explains the ethical issues in engineering, showing how they affect assessment, design, sustainability, and globalization, and explores many recent examples including the Fukushima Daiichi nuclear disaster, Dieseltgate, 'naked scanners' at airports, and biofuel production. Detailed but accessible, the book will enable advanced engineering students and professional engineers to better identify and address the ethical problems in their practice.

The Engineering Project

Ethics in Engineering Practice and Research

Engineering Ethics and Design for Product Safety

Optimizing Student Engagement in Online Learning Environments

Deep Learning for Coders with fastai and PyTorch

Engineering Ethics: Challenges and Opportunities aims to set a new agenda for the engineering profession by developing a key challenge: can the great technical innovation of engineering be matched by a corresponding innovation in the acceptance and expression of ethical responsibility? Central features of this stimulating text include: · An analysis of engineering as a technical and ethical practice providing great opportunities for promoting the wellbeing and agency of individuals and communities. · Elucidation of the ethical opportunities of engineering in three key areas: Engineering for Peace, emphasizing practical amelioration of the root causes of conflict rather than military solutions. Engineering for Health, focusing on close collaboration with healthcare professionals for both the promotion and restoration of health. Engineering for Development, providing effective solutions for the reduction of extreme poverty. · Innovative strategies for implementing these ethical opportunities are described: Emphasis on the personal responsibility of every engineer and on the benefits of supporting social structures. Use of language and concepts that are appealing to business managers and political decision makers. · Future prospects for increasing the acceptance and expression of ethical responsibility by engineers are envisaged. · Engineering Ethics: Challenges and Opportunities provides engineers, decision makers and the wider public with new understanding of the potential of engineering for the promotion of human flourishing.

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