

Engineering Reading List

Some excellent books to read if you have a love of engineering. All universities include reading lists to help students explore aspects of engineering. Why not look for further ideas on their sites.

Structures – or Why Things Don’t Fall Down by J.E. Gordon

This Engineering book has been read by countless people with an interest in engineering across the globe. Straightforward and relatively accessible, it is the perfect introduction for aspiring students. This will help ease some of the misunderstandings you may have about engineering and answer meaningful questions that often get overlooked.

Hello World: How to be Human in the Age of the Machine by Hannah Fry

Hannah Fry takes us on a tour of the good, the bad and the downright ugly of the algorithms that surround us. In Hello World she lifts the lid on their inner workings, demonstrates their power, exposes their limitations, and examines whether they really are an improvement on the humans they are replacing.

The Design of Everyday Things by Don Norman

Design is simple, right? You make a product that solves the problem you want to address, and voilà! But in reality, effective and efficient design is an ongoing process accompanying the change and evolution of the world around us. In this book, Don Norman shows how the design of an item serves as a communication channel between a non-living object and its user. Tips and tricks give readers a better insight on how to build objects in the best way, meaning this is a great read for anyone, at any stage in their engineering career!

Sustainable Materials – With Both Eyes Open by Julian Allwood and Jonathan Cullen

Engineering designs are heavily dependent on the materials available for use. Sustainability is increasingly important as our global society looks to address urgent environmental concerns. For example, steel and aluminium industries alone account for nearly 30% of global emissions. Governments are now setting emissions targets that rightfully require the engineering industry to reform its practices; the materials we use, and their life cycles, are changing. Serving two purposes, this book is both a wakeup call to the environmental impact of engineering and a solutions manual. Not just for engineers, this is an interdisciplinary resource of information and inspiration for all parties involved in addressing the climate crisis.

The Gecko's Foot: How Scientists are Taking a Leaf from Nature's Book by Peter Forbes

Nature is breath-taking. Evolution is even more astounding. The solutions to many of the problems engineers face have in fact already been found and tested by nature. And so, this book argues, our task is to imitate nature by applying natural phenomena to our practical engineering problems. A gecko can scale vertical glass and walk on ceilings, thanks to the millions of bristles that each ramify into hundreds of further projections. This book discusses the work of nano-scientists looking to replicate this feature, among many other examples of scientists harnessing the beautiful solutions of nature.

Engineer to Win by Carroll Smith

Carroll Smith is a legendary high-performance Formula 1 racer. As the title suggests this book explores the commitment to performance that is necessary at world-class level. For those serious about becoming a highly successful engineer, this book will enlighten you on the mentality, attitude, and skills you will need to build a career. Additionally, it is doubly relevant to those interested in mechanical, aerospace and materials disciplines, given the nature of Smith's research.

An Astronaut's Guide to Life by Chris Hadfield

This book explores the mind of Christ Hadfield, an astronaut, and Chief of the International Space Station, who has worked to bring space science to a level accessible by the general population. Full of insights on life, love, commitment, and the determination necessary to be an astronaut, this book will open up a whole new perspective on how to approach your studies and your career as an engineer.

Success Through Failure: The Paradox of Design by Henry Petroski

You may have heard the saying "the biggest problem is finding out what the problem itself is." This is a constant reality and responsibility for engineers, who must design solutions to ever-changing and increasingly complex problems. Sometimes engineers get it almost perfectly right, and other times we don't. Looking at the essence of invention, Henry Petroski argues that we have often built success on the back of failure, not through the easy imitation of success. He adds that there is no surer road to failure than modelling designs solely on past successes. This book will expand your appreciation of engineers past and present and will encourage you to adapt your approach to the trickiest engineering problems.

How to Fail at Almost Everything and Still Win Big by Scott Adams

Building on the same ideas of Success Through Failure, this book by Scott Adams gives further tricks and ideas to help you out of sticky situations where you might come across failure. Not just applicable to your engineering concerns, this will help the reader to navigate through life with resilience and the right attitude towards success and failure.