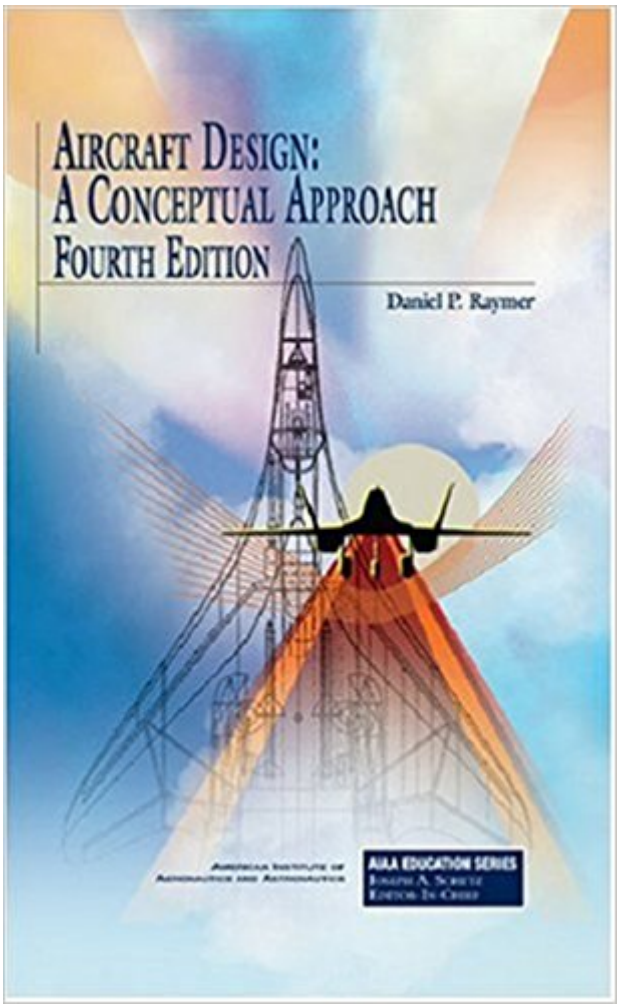
Aircraft Design: A Conceptual Approach, Fourth Edition (AIAA Education)



Synopsis

Winner of the Summerfield Book Award, winner of the Aviation-Space Writers Association Award of Excellence, and with over 30,000 copies sold, this is consistently the top-selling AIAA textbook title. This highly regarded textbook presents the entire process of aircraft conceptual design - from requirements definition to initial sizing, configuration layout, analysis, sizing, and trade studies - in the same manner seen in industry aircraft design groups. Interesting and easy to read, the book has more than 900 pages of design methods, illustrations, tips, explanations, and equations, and has extensive appendices with key data essential to design. The book is the required design text at numerous universities around the world and is a favorite of practicing design engineers. The new fourth edition is enhanced in many areas, with improvements and reworking of the text, expanded sizing and analysis methods, and up-to-date treatments of emerging technologies and concepts. A new section provides an introduction to spaceflight and rockets including thrust analysis and vehicle sizing for launch and planetary missions. Appendices are revised and additional exam questions are provided.

Book Information

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Customer Reviews

"I never felt that I had a good formulation of (Design) until I read the introduction of Daniel Raymer's Aircraft Design: A Conceptual Approach. Raymer... implies that design involves far more than drawing a pretty shape and then shoe-horning people, engines, and structural members into it. It

involves art. Raymer’s book... takes a practical, rather than academic, view of the development of a design. It covers not only aerodynamics, stability, and stress analysis...but also the interstitial stuff about general arrangement and the interplay of competing design considerations that are really the grout that holds a design together. --Peter Garrison, in Flying, May 1997 Reliable--as always from AIAA, the best source of quality aircraft technical literature.--Craig Roberts, Roberts Sport Aircraft Outstanding Reference--more homebuilders/designers should purchase this text! Keep making your books available to the EAA!!-- Brad Knapp, EAA It was as if this book was written specifically for me and brought closure to theoretical concepts with understanding. --James"

I’m not an Aerospace Engineer, my application was more in in-line with RC use and maybe even kit construction, but I found this book to be quite readable. I would say the best feature was the language use, it never felt like you were being talked down to (like another Aerospace book that I tried to read which will go unmentioned) or overwhelmed with mathematical proofs. Concepts were well explained, and I learned a bit. I found much useful info in this book even though Jet aircraft design was not applicable to me. But given how all of the information was presented the book was at least interesting enough to read in its entirety.As been pointed out by others, there is not much talk of airfoils and many specifics of piston aircraft.

Quick shipping, every Aerospace enthusiast should have and read this book, thanks!

Very useful design information that was missing from my college aerospace education, which focused mostly on analysis. Lots of practical tips and considerations. I particularly like chapter 7 on lofting. The description of conic lofting is very well written and not available in any of my other references. I have used this technique several times since buying the book. Both for modeling existing parts in order to perform finite element anlysis, and for designing new parts for production.

It’s a Book very good but a few old.

this book takes one from initial stages of development thru the necessary engineering calculations, and assists one in determining the design based not upon its flight characteristics, but its mission, a modern concept, well written even for me, and I am no engineer. I read this like one would read the bible. Well, laid out, but its a textbook. Enough said.

This is an excellent, and for the time being the authoratative, book about aircraft design. For anyone who wants to become an aerospace engineer reading a book like this should put any type of work they'll do in the proper context.The best part of this book is that it is split into two halves. The frist half talks specifically about aircraft design from a practical level, covering topics like wing planform selection, thrust to weight and wing loading determination, engine sizing, landing gear configuraiton, etc. This is the applied, design oriented type of knowledge and thinking that all engineers need and is unfortunately not being taught by most schools, albeit it is of course specific to aircraft. (My college had just one ten week aircraft design course over an entire four year curriculum. The course was offered in two sections. Only one of the sections even had this book on the reading list, and then didn't even use it in class!) The second half delves into the analytical methods that are used to "size" different parts of the aircraft, such as methods to predict drag (for engine thrust in cruise), to predict downwash both subsonically and supersonically (effects total lift and stability and control), to determine rough sizes of beam and torsion members of the structure, to size the control surfaces for stability and control, etc. There's also a good interlude where the author gives us a step-by-step example of how you could do conceptual design. (This is not the ONLY way to do conceptual design, but it's important to have SOME method and this is a great introduction to one.) It also has two good example designs in the appendix, plus LOTS of good reference data throughout the book.This is the type of book that should be read first by anyone involved with aircraft design and/or research and development so that they can understand the big picture framework of how aircraft are generally configured.

Superb in-depth coverage of aircraft ensign, clearly and entertainingly written.

I used this book for my senior aerospace capstone course. It explains concepts very well, with graphs and diagrams where needed. It also walks through the process of design for aircraft, which was extremely helpful.

Second Edition (AIAA Education) Fundamentals of Aircraft and Airship Design (AIAA Education Series) Loose-leaf Version for Genetics: A Conceptual Approach 6E & Sapling Plus for Genetics: A Conceptual Approach 6E (Six-Month Access) Gust Loads on Aircraft: Concepts & Applications (AIAA Education) Aircraft Systems: Mechanical, Electrical, and Avionics Subsystems Integration (AIAA Education) Introduction to Aircraft Flight Mechanics: Performance, Static Stability, Dynamic Stability, Classical Feedback Control, and State-Space Foundations (AIAA Education) Space Vehicle Design, Second Edition (AIAA Education) Introduction to Aeronautics: A Design Perspective, 2nd Edition (Aiaa Education Series) Elements of Spacecraft Design (AIAA Education) The YC-14 STOL Prototype: Its Design, Development, and Flight Test (AIAA Education) Composite Construction for Homebuilt Aircraft: The Basic Handbook of Composite Aircraft Aerodynamics, Construction, Maintenance and Repair Plus, How-To and Design Information Elements of Propulsion: Gas Turbines and Rockets, Second Edition (Aiaa Education) Hypersonic and High-Temperature Gas Dynamics, Second Edition (AIAA Education) Introduction to Aeronautics, Third Edition (AIAA Education Series) An Introduction to the Mathematics and Methods of Astrodynamics, Revised Edition (Aiaa Education Series)