1. Record Nr. UNINA9911007031803321

Autore	Megson T. H. G (Thomas Henry Gordon)
Titolo	Aircraft structures for engineering students / / T.H.G. Megson
Pubbl/distr/stampa	Oxford, : Butterworth-Heinemann, 2022
ISBN	9780323902113 0323902111 9780128228685 0128228687
Edizione	[7th ed.]
Descrizione fisica	1 online resource (xv, 944 p.) : ill
Collana	Elsevier aerospace engineering series
Disciplina	629.13431
Soggetti	Airframes Structural analysis (Engineering)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Part A: Fundamentals of Structural Analysis -- Section A1: Elasticity -- 1. Basic elasticity -- 2. Two-dimensional problems in elasticity -- 3. Torsion of solid sections -- Section A2: Virtual work, energy, and matrix methods -- 4. Virtual work and energy methods -- 5. Energy methods -- 6. Matrix methods Section -- A3: Thin plate theory -- 7. Bending of thin plates -- Section A4: Structural instability -- 8. Columns -- 9. Thin plates -- Section A5: Vibration of structures -- 10. Structural vibration -- Part B: Analysis of Aircraft Structures Section -- B1: Principles of stressed skin construction -- 11. Materials -- 12. Structural components of aircraft -- Section B2: Airworthiness and airframe loads -- 13. Airworthiness -- 14. Airframe loads -- 15. Fatigue -- Section B3: Bending, shear and torsion of thin-walled beams -- 16. Bending of open and closed, thin-walled beams -- 17. Shear of beams -- 18. Torsion of beams -- 19. Combined open and closed section beams -- 20. Structural idealization -- Section B4: Stress analysis of aircraft components -- 21. Wing spars and box beams -- 22. Fuselages -- 23. Wings -- 24. Fuselage frames and wing ribs -- 25. Laminated composite structures -- Section B5: Structural and loading discontinuities -- 26. Closed section beams -- 27. Open section beams -- Section B6: Introduction to aeroelasticity -- 28. Wing

problems -- Appendix: Design of a rear fuselage -- Index.

Sommario/riassunto

Aircraft Structures for Engineering Students, seventh edition, is the leading self-contained aircraft structures course text suitable for one or more semesters. It covers all fundamental subjects, including elasticity, structural analysis, airworthiness and aeroelasticity. Now in its seventh edition, the author has continued to expand the book's coverage of analysis and design of composite materials for use in aircraft and has added more real-world and design-based examples, along with new end-of-chapter problems of varying complexity. Retains its hallmark comprehensive coverage of aircraft structural analysis; New practical and design-based examples and problems throughout the text aid understanding and relate concepts to real world applications; Updated and additional Matlab examples and exercises support use of computational tools in analysis and design; Available online teaching and learning tools include downloadable Matlab code, solutions manual, and image bank of figures from the book.