1. Record Nr. UNINA9911007084103321

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Titolo	Aircraft structures for engineering students / / T. H. G. Megson
Pubbl/distr/stampa	Oxford, England ; ; Waltham, Mass., : Butterworth-Heinemann, c2013
ISBN	0-08-096906-2
Edizione	[5th ed.]
Descrizione fisica	1 online resource (875 p.)
Collana	Elsevier aerospace engineering series
Disciplina	629.134/31
Soggetti	Airframes Structural analysis (Engineering)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Front Cover; Aircraft Structures for engineering students; Copyright; Dedication; Contents; Preface; Part A: Fundamentals of structural analysis; Section A1: Elasticity; Chapter 1: Basic elasticity; Stress; Notation for forces and stresses; Equations of equilibrium; Plane stress; Boundary conditions; Determination of stresses on inclined planes; Principal stresses; Mohr's circle of stress; Strain; Compatibility equations; Plane strain; Determination of strains on inclined planes; Principal strains; Mohr's circle of strain; Stress-strain relationships; Temperature effects Experimental measurement of surface strainsReferences; Additional Reading; Chapter 2: Two-dimensional problems in elasticity; Two-dimensional problems; Stress functions; Inverse and semi-inverse methods; St. venant's principle; Displacements; Bending of an end-loaded cantilever; Reference; Chapter 3: Torsion of solid sections; Prandtl stress function solution; St. Venant warping function solution; The membrane analogy; Torsion of a narrow rectangular strip; References; Section A2: Virtual work, energy, and matrix methods; Chapter 4: Virtual work and energy methods; Work Principle of virtual workPrinciple of virtual work for a particle; Principle of virtual work for a rigid body; Virtual work in a deformable body; Work done by internal force systems; Axial force; Shear force; Bending moment; Torsion; Hinges; Sign of internal virtual work; Virtual work due to external force systems; Use of virtual force systems;

Applications of the principle of virtual work; Reference; Chapter 5: Energy methods; Strain energy and complementary energy; Principle of the stationary value of the total complementary energy; Application to deflection problems
Application to the solution of statically indeterminate systemsUnit load method; Flexibility method; Self-straining trusses; Total potential energy; Principle of the stationary value of the total potential energy; Principle of superposition; Reciprocal theorem; Temperature effects; References; Further reading; Chapter 6: Matrix methods; Notation; Stiffness matrix for an elastic spring; Stiffness matrix for two elastic springs in line; Matrix analysis of pin-jointed frameworks; Application to statically indeterminate frameworks; Matrix analysis of space frames Stiffness matrix for a uniform beamFinite element method for continuum structures; Stiffness matrix for a beam-element; Stiffness matrix for a triangular finite element; Stiffness matrix for a quadrilateral element; References; Further reading; Section A3: Thin plate theory; Chapter 7: Bending of thin plates; Pure bending of thin plates; Plates subjected to bending and twisting; Plates subjected to a distributed transverse load; The simply supported edge; The built-in edge; The free edge; Combined bending and in-plane loading of a thin rectangular plate
Bending of thin plates having a small initial curvature

Sommario/riassunto

Aircraft Structures for Engineering Students is the leading self contained aircraft structures course text. It covers all fundamental subjects, including elasticity, structural analysis, airworthiness and aeroelasticity. Now in its fifth edition, the author has revised and updated the text throughout and added new examples and exercises using Matlab(c). Additional worked examples make the text even more accessible by showing application of concepts to airframe structures. Includes a Solutions Manual available to all adopting teachers. * New worked examples throughout the tex