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"Mechanical Engineering

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Over 1,000 chapter problems provide the "deliberate practice" with feedback that leads to material mastery, and discussion of real-world applications provides a frame of reference that enhances student comprehension. The study of fluid mechanics pulls from chemistry, physics, statics, and calculus to describe the

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behavior of liquid matter; as a strong foundation in these concepts is essential across a variety of engineering fields, this text likewise pulls from civil engineering, mechanical engineering, chemical engineering, and more to provide a broadly relevant, immediately practicable knowledge base. Written by a team of

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educators who are also practicing engineers, this book merges effective pedagogy with professional perspective to help today's students become tomorrow's skillful engineers.

Composite materials have been representing most significant breakthroughs in various industrial

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applications, particularly in aerospace structures, during the past thirty five years. The primary goal of Advanced Mechanics of Composite Materials is the combined presentation of advanced mechanics, manufacturing technology, and analysis of composite materials. This approach lets the engineer take into account the essential

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mechanical properties of the material itself and special features of practical implementation, including manufacturing technology, experimental results, and design characteristics. Giving complete coverage of the topic: from basics and fundamentals to the advanced analysis including practical design and engineering

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applications. At the same time including a detailed and comprehensive coverage of the contemporary theoretical models at the micro- and macro- levels of material structure, practical methods and approaches, experimental results, and optimisation of composite material properties and component performance.

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The authors present the results of more than 30 year practical experience in the field of design and analysis of composite materials and structures. * Eight chapters progressively covering all structural levels of composite materials from their components through elementary plies and layers to laminates * Detailed presentation

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of advanced mechanics of composite materials * Emphasis on nonlinear material models (elasticity, plasticity, creep) and structural nonlinearity

Developed by the National Strength and Conditioning Association (NSCA) and now in its fourth edition, Essentials of Strength Training and Conditioning is the

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objectives, and learning aids including key terms and self-study questions provide a structure to help students and professionals conceptualize the information and reinforce fundamental facts. Application sidebars provide practical application of scientific concepts that can be used by strength and conditioning specialists in

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design, and structure and function of body systems. Its scope, precision, and dependability make it the essential preparation text for the CSCS exam as well as a definitive reference for strength and conditioning professionals to consult in their everyday practice. Note: A code for accessing HKPropel is not included

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*explanation of the basic
properties of materials;
of how these can be
controlled by processing;
of how materials are
formed, joined and
finished; and of the chain*

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of reasoning that leads to a successful choice of material for a particular application. The materials covered are grouped into four classes: metals, ceramics, polymers and

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composites. Each class is studied in turn, identifying the families of materials in the class, the microstructural features, the processes or treatments used to obtain

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*Principles of Composite
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*analytical approaches
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materials to more advanced
elasticity and finite
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*added in most chapters,
bringing the grand total
to 95 worked-out examples
(a 19% increase) and 212
homework problems (a 12%
increase) Worked-out
example problems and*

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*homework problems are now
integrated within the
chapters, making it clear
to which section each
example problem and
homework problem relates
Answers to selected*

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*homework problems are
featured in the back of
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provides a solid
foundation upon which*

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*students can begin work in
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