

# List of Changes



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## Basics of Engineering Economy 3rd Edition

**Leland Blank and Anthony Tarquin**

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The topic of money permeates virtually all aspects of daily life, be it work, play, travel or sports for all of us as individuals. Similarly, financial funding, revenues, and expenses are ever present considerations in business, industry, and government activities. This text is specifically designed to assist students in understanding and using the fundamental concepts and methods of economic evaluation to materially enhance rational data-centered decision-making in all these dimensions.

This third edition concentrates on fundamental techniques and their applications, the efficient use of spreadsheets, and a rich coverage of personal financial situations in which engineering economy techniques can be applied easily and rapidly. The text presents the topics in condensed formats when compared to the larger text *Engineering Economy*.

In professional and personal economic decision-making, the elements of risk and ethics are commonly involved. Risk is present because evaluations are performed using estimates about future projects, systems, and services. Ethics is a real concern, as money is the root of many ethical and unethical, as well as legal and illegal monetary decisions. These topics are treated throughout the text.

SEE LIST OF CHANGES ATTACHED.

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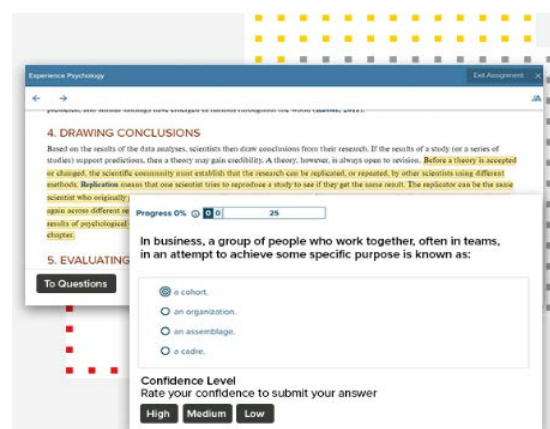
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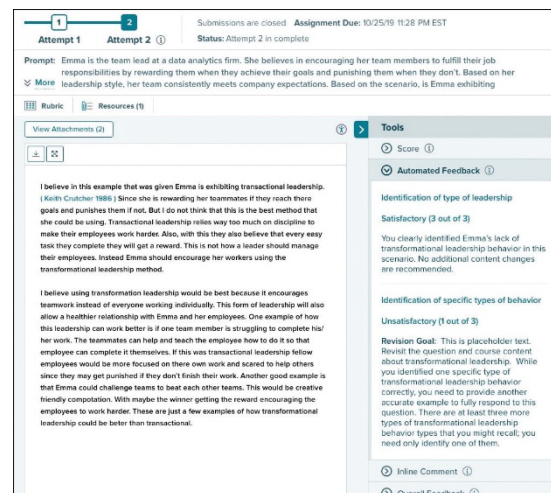
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### New to This Edition:

Several new features are included in this third edition. The principal new ones are:

**Personal finance**—The use of engineering economy methods and analysis procedures applicable to individuals is greatly emphasized. Each example and problem that provides a realistic personal finance situation is marked in the margin by an icon (shown in the margin here). Approximately 21% of solved examples and 16% of the end-of-chapter problems display this icon. Examples and problems cover a wide variety of personal finance topics for both the debt/credit and investment sides of life, such as credit cards, car loans, personal loans, home mortgages, debt and equity considerations, stock and bond investment, retirement planning, philanthropy, and more.

**Algorithmic end-of-chapter problems**—Available through Connect®, algorithmic end-of-chapter problems can be used for homework, problem-based learning, practice sessions, lectures, class-based team activities, flipped classroom environments, quizzes and exams. Problems include algorithmically generated values so that each student receives different numbers, while responses are auto-graded to provide immediate feedback to the student.

**Risk considerations**—To allow the inclusion of risk earlier in the textual material, the sections on risk and economic analysis have been moved to Chapter 8, along with breakeven and sensitivity evaluations.

**Inflation, purchasing power, and cost of capital**—Chapter 1 now includes foundation discussions on these three important topics. Full consideration of the effects of inflation and project financing (debt and equity) are still included in later chapters, with ties to the initial discussions in Chapter 1.

**Expansion and reordering of topics**—In addition to the aforementioned improvements, several chapters have reordered coverage of topics to improve the flow of learning. Examples are the repositioning of payback analysis (Chapter 8), replacement studies (Chapter 9), and depletion (Chapter 12). Expanded material is included on the profitability index (Chapter 7), accuracy and precision of estimates, plus the work breakdown structure (Chapter 11), added depreciation models (Chapter 12), as well as current income tax rates and schedules for corporations and individuals (Chapter 13).

**Expanded spreadsheet usage**—Spreadsheet solutions of examples are now integrated into the chapter proper. Factor and spreadsheet solutions are included in many of the examples to ensure understanding of what the spreadsheet functions do to provide a correct response and answer. A specially designed expanded example (and associated template and end-of-chapter problems) on after-tax evaluation, including debt capital, depreciation, effective interest rates, inflation, the MARR, and, of course, taxes, is included in Chapter 13. We are thankful for this contribution by Dr. Marylee Southard, University of Kansas.

**Flexibility in coverage flow**—Depending on the order of topics presented in the course syllabus, the numerical progression through the chapters may not be as desired. The flowchart that follows explains when a “chapter jump” may be placed without the loss of background material. As shown, most topics can be addressed after the foundation chapters through annual worth (Chapter 5) are covered; however, to ensure complete foundational understanding of all measures, the rate of return material (Chapter 6) will guarantee thorough coverage if risk, taxes, inflation, replacement, or other topics are covered outside the numerical progression of the chapters.

**Updated lecture slides**—For registered adopters, the website includes updated PowerPoint slides for use in lecture and team presentation sessions.

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