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Engineering Economy

SIXTEENTH EDITION

William G. Sullivan
Elin M. Wicks
C. Patrick Koelling



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ENGINEERING ECONOMY

SIXTEENTH EDITION

GLOBAL EDITION

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PREFACE

We live in a sea of economic de

—Ano

About Engineering Economy

A succinct job description for an engineer consists of two words: *problem*. Broadly speaking, engineers use knowledge to find new ways of doing economically. Engineering design solutions do not exist in a vacuum but with context of a business opportunity. Given that every problem has multiple solutions, the issue is, How does one rationally select the design with the most favorable economic result? The answer to this question can also be put forth in two words: *engineering economy*. Engineering economy provides a systematic framework for evaluating the economic aspects of competing design solutions. Just as engineers model the stress on a support column, or the thermodynamic response of a turbine, they must also model the economic impact of their recommendations.

Engineering economy—what is it, and why is it important? The initial reaction of many engineering students to these questions is, “Money matters will be handled by someone else. They are not something I need to worry about.” In reality, an engineering project must be not only physically realizable but also economically affordable.

Understanding and applying economic principles to engineering have become more important. Engineering is more than a problem-solving activity focused on the development of products, systems, and processes to satisfy a need or demand. Beyond function and performance, solutions must also be economically sound. Design decisions affect limited resources such as time, materials, labor, capital, and natural resources, not only initially (during conceptual design) but also through the remaining phases of the life cycle (e.g., detailed design, manufacture and distribution, service, retirement and disposal). A great solution can die a certain death if it is not profitable.

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