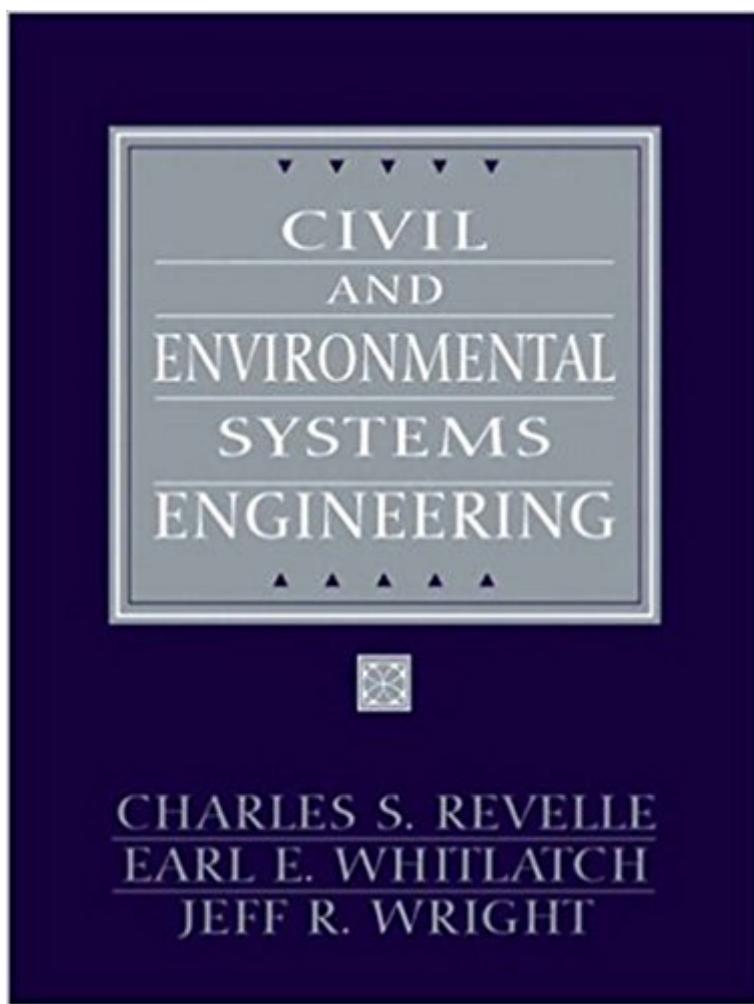


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# Civil And Environmental Systems Engineering (2nd Edition)



## **Synopsis**

With a major reorganization and a plethora of new material, the Second Edition of this acclaimed book is designed to provide exposure to modeling ideas and concepts prior to introducing the mathematical process of model building. Network flow problems are emphasized by being presented separately from the general integer programming models that are considered. With an even broader range of examples and exercises that conclude many chapters, this book offers readers an extremely practical, accessible overview of the most modern skills available for the design, operation and evaluation of civil and environmental engineering systems. For professionals with a career in engineering, environmental science, economics, and/or construction.

## **Book Information**

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## **Customer Reviews**

Broad and comprehensive in coverage -- and student-friendly in approach -- this text focuses on the most modern skills available for the design, operation and evaluation of civil and environmental engineering systems -- optimization/systems modeling and engineering economics. Exceptionally practical, it features several chapters that present new techniques and methodologies in the context of real-life problem situations. --This text refers to an out of print or unavailable edition of this title.

Civil and Environmental Systems Engineering is designed for a junior- or senior-year course on systems analysis and economics as applied to civil engineering. This civil system/engineering economics course has evolved over roughly the last 30 years and draws on the fields of operations

research and economics to create skills in problem solving. Because of the presence of several more advanced sections and sections focusing on applications in the book, it may also be useful as a text for first-year graduate courses that introduce students to civil systems. The second edition improves on an already classic book in its field by introducing new material and reorganizing portions of the previous edition. The new material is designed to enhance the student's learning experience by introducing modeling ideas and concepts at the outset, prior to teaching the mathematical process of model building. Network flow problems are given special treatment by highlighting their study separately from the general integer programming models that are considered. As well, the range of examples offered for the student's consideration is expanded not only as a motivational tool, but to illustrate the breadth of applications possible. A number of new end-of-chapter questions have been added to enhance the already well-received engineering economics chapters.

**REORGANIZED CHAPTERS**

Chapter 1: Now combines the historical development of systems analysis and the steps a model builder follows in structuring an optimization model. Includes verbal descriptions of settings where models can be employed. The student is challenged to identify, in the context of these settings, not only constraints and appropriate decision variables, but also the needed parameters and problem objectives.

Chapter 2: Now consists of the general form of the linear programming problem and nine examples or stylized problems that are described in detail, as well as solved, to help introduce the student to the concept of optimization modeling.

Chapter 6: All the major network flows concepts have been drawn together into one chapter.

Chapter 7: The topics of integer programming, branch and bound, and the applications of integer programming are now contained in their chapter.

This book is required for several courses in the civil engineering major at Ohio State University. I am a current student and had to "use" this book for one of my classes last quarter. The focus is on the economics of engineering projects, specifically waste water treatment plants/systems. The book explains nothing in very brief sections, yet asks homework questions about topics neither brought up nor explained in any depth/example. I feel as though no serious time or thought went into writing this book and I am extremely disappointed that this book was chosen to be used (possibly because one of the authors is a current and longtime faculty member???). Avoid if you can.

The subjects in this book are extremely broad and have a wide range of applications for systems engineering. So, I understand why the text was broad (they don't want to teach one method as if that's the only way of finding the answer), but that makes it so much more difficult to come up with

AN answer. Luckily, most topics in this book aren't really all that complicated. But I remember some instances of staring at a table for 10 minutes trying to find out the pattern that was there while re-reading through the unnecessarily wordy text. Not a fun book at all. I can't remember the name of the book at the moment, but I know that most of what I learned from systems engineering from another text with more detailed examples and an Excel-based approach for teaching solutions (even though that is not the ONLY answer).

Book provided the needed information to learn the subject. It however had numerous mistakes and our professor wasn't pleased with how things were laid out.

good book, delivered on time.

Last Year of Engineering!

This book was sufficient for CME 396. I didn't use it much except when I was assigned homework to it.

Great reading to understand linear and simplex programs

Seller stated the book was in good condition. However for the 90 dls (including shipping) I paid I was expecting a book with clean pages. Several pages have are underline parragraphs, entire sentences highlighted with fluorescent marker and all kinds of notes written all over the book. The corners of the hard cover are already splitted from being drop or miss used. For something like this I'd had paid 40 dls max.

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