Preface

Electronic spreadsheets play a key role in the decision making process as organizations become leaner and less reliant on centralized staff positions. Recommendations are increasingly based on collaborative efforts rooted firmly in customer input, process data, and empowered employees. Spreadsheet software provides a common workhorse for all areas of the organization. Applications range from simple payback calculations to Monte Carlo simulation and even integer linear programming. All of these techniques, and more, are presented in this supplement.

Engineers often lead these problem solving teams, even in non-manufacturing organizations. It is in every engineer's best interest to be familiar with spreadsheets and how to use them effectively in project evaluation and selection. This is reason enough to emphasize the use of spreadsheet software in an engineering economy course, but our immediate objective is to use spreadsheets to improve the learning process. The primary purposes of the Twelfth Edition of Engineering Economy are:

1. to provide students with a sound understanding of the principles, basic concepts and methodology of engineering economy; and
2. to help them develop proficiency with these methods and with the process for making rational decisions regarding situations they are likely to encounter in professional practice.
3. Spreadsheet software helps fulfill both objectives. The act of formulating a spreadsheet model provides rapid feedback regarding mastery of basic concepts, as well as focusing attention on methodology. Proficiency develops through practice and exploration, which spreadsheets encourage by removing tedious hand calculations. Less time crunching numbers leaves more time to focus on understanding concepts. Additional benefits of this supplement are:

   1. to serve as a study aid for current students,
   2. to provide a quick reference guide for those who need to perform economic analysis on the job, and
   3. to provide a quick review for the professional engineer licensing exams.

This supplement provides the foundation needed to develop spreadsheet modeling skills for engineering economic analysis. Approximately 50 spreadsheet templates are provided, illustrating every major problem category covered in the Twelfth Edition. It is assumed that readers are familiar with their hardware, operating system, and the basics of their spreadsheet software.

There are many excellent spreadsheet software packages on the market. The choice between them is largely one of personal preference and access. To maintain a consistent view, Microsoft Excel is used to illustrate all of the templates in this supplement. Equivalent functions and commands are available in Lotus 1-2-3 and Corel Quattro Pro.

In addition to the templates, this supplement also includes a text file for each chapter that summarizes key points and formulas from the Twelfth Edition.

Special thanks are due to the lead author, William G. Sullivan, for recognizing this opportunity to improve the learning process and for guidance in bringing this work to completion.

As with all of my endeavors, I am indebted to my wife, Janet, for her support and editorial contributions.