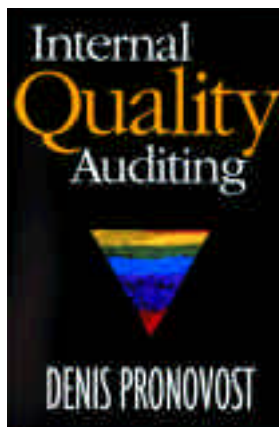# Books

Internal Quality Auditing

Denis Pronovost
American Society for Quality, Milwaukee WI, 140 pp., indexed, $38, 2000

This book is intended as a guide to aid in the implementation of efficient internal quality audits. It consists of two main sections: the first, "Managing the Audit Program," is intended to help auditors manage their audit programs more efficiently, and the second, "Doing an Audit," is for people interested in starting internal audits.

The chapters generally begin with a note on the objective or purpose of their content. This usually sets the expectation level and gives the reader an idea of what is to come. Most of the concepts are explained in a simple and succinct manner and the author also provides examples of the forms required, which prove very helpful in understanding the logistics of internal audits.

The book provides a recipe for performing internal audits. The author supplies all of the ingredients, however, the presentation and usefulness of the material would have been increased with inclusion of a recipe. A flowchart, checklist or algorithm summarizing the entire procedure in each section, especially Section II, would have given the reader a better grasp of the overall concept. This would also provide a skeleton around which to design an effective audit.

There is also no mention of benchmarking. What does an auditor compare the results of an audit with? Does he or she use internal or external standardized benchmarks? The author should have tackled such issues more effectively. Anecdotes and examples would have helped to better understand not only the concepts, but also the pitfalls encountered in the auditing process.

Overall, this book is recommended as a reference tool for experienced auditors. It would be useful for those organizations that want to develop their own audit program.

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Process Control: Designing Processes and Control Systems for Dynamic Performance

Thomas Marlin
McGraw-Hill, New York, 1,056 pp., $104.69, 2000

The chemical engineering industries are looking more than ever for highly computer-literate and critical thinking individuals. Dr. Marlin, as a scholar and a leading consultant to the industry, introduces process control to the reader both practically and theoretically. While there have been several textbooks on process control, Coughanowr's book was the most liked one by my students. I believe that Marlin's book can take the attention of both students and teachers due to its current content and complementary learning materials, such as the Process Control Interactive Learning Modules and Software Laboratory.

Part I starts by laying the ground for the whole subject, and introduces the necessity and background for process control so that the reader can have an overall view. The material in the introduction is highly informative.

Process dynamics is presented in Part II. The plan of attack to problems is introduced first, and, throughout the book, the mathematical background is explained when necessary. This method of approach is critical for proper modeling; so is the mathematical background. Therefore, this book rises above the others as a student-centered one. I also find highlights in the text valuable for a complete understanding of the material presented.

Part III covers feedback control including controller tuning, stability analysis and practical applications. The first three parts, along with a selection of topics in the remainder of the book give students enough knowledge to learn the rest of the material by themselves.

Part IV deals with the enhancements to single-loop feedback control including cascade, feedforward, inferential, level, and single-variable-model predictive controls. These topics are essential to understand the more-advanced, multivariable design topics, and are keys to design control strategies for complex units.

In practice, some processes require several controlled variables to be maintained at independent setpoints. Multivariable control is presented in Part V to address these control systems. Multiple loop, variable-structure, constraint, and centralized controls are put forward through several examples. The final part of the textbook introduces process control design. Part VI shows how to carry out the design procedure by presenting its major features and by providing examples.

The examples given throughout the book are worked out in detail and the problems assigned at the end of each chapter are quite solvable. Fundamental problems are included to comprehend the material introduced. Marlin's volume is a current and well-written work that anyone interested in process control should own, and I am looking forward to using it as a textbook.

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