

REVIEW: Polymer Science and Engineering

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tory supplement for a course on polymer processing where these particular topics are not covered. Researchers in other branches of material science in search of new materials will find the book of interest. Finally, leaders in science policy and funding will find the book informative. □

ChE book review

ENGINEERING YOUR FUTURE: Launching a Successful Entry-Level Technical Career in Today's Business Environment

by Stuart G. Walesh

Prentice Hall, 439 pgs. (1995)

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Engineering educators have been told repeatedly that our students have the technical skills to succeed, but often do not have the necessary communication, interpersonal, time management, and business skills needed. This book is an outstanding effort to help remedy that problem. It could be used as a text for a senior course, for self-study by young professionals, or as a resource in short courses.

After the introductory chapter, there is an excellent chapter on self-management. It includes a brief discussion on the differences between school and work (*e.g.*, tardiness is not tolerated). The fourteen pages on time management are too brief, but the author is able to condense an incredible amount of useful information into these pages. After further good advice, the author notes the importance of attitude—one can *choose* to be a winner. The chapter closes with strong arguments for participation in professional organizations and for becoming licensed. This emphasis reflects the author's civil engineering background, but is not inappropriate for chemical engineers in a volatile employment environment.

Chapter 3, Communication Skills, will prove useful to seniors (and professors) who think they have read everything there is to know about communication. The chapter starts with the novel idea that listening is a communication skill. The author states that writing best communicates facts and details, while speaking "clearly holds the power of persuasion." Note that this implies professors should use lectures for motivation and attitude adjustment, not to present facts and details. The section on writing contains both common advice and uncommon advice (*e.g.*, write the easy parts first). The section on speaking will also be useful to both inexperienced and experienced speakers. It contains a very good list on speaking in addition to useful comments on international audiences.

Chapter 4 on management of relationships is a continuation of Chapter 2. Topics in this chapter include: Maslow's Hierarchy of Needs, Theories X and Y, Delegating, Managing Meetings, Working with Support Personnel, Managing Your Boss (very brief), and "Caring Isn't Coddling." Although this is useful information, I

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doubt much of it will be appreciated by seniors or new engineers. The sections on support personnel and caring should be assigned to all students before any work assignments (COOP, summer job, or permanent work). This chapter would benefit from an exercise section.

Chapter 5 is on the organization of organizations. Since I would expect most engineers to be able to determine this rather quickly on their own, I suggest skipping this chapter.

Chapter 6, Project Management, is a gem, particularly for chemical engineers who often do not formally study these methods. The author starts with a simple chronological list, continues with the visually appealing Gantt chart, and finishes with a long section on the more complex and more powerful critical path method. The exercises at the end of this chapter will help the engineer understand these methods.

Chapter 7, Total Quality Management, is written for engineers with no knowledge of TQM. It should serve as a good introduction to TQM for engineers who will work in a TQM organization.

The next chapter, on decision economics, covers material that is traditionally covered in chemical engineering senior design classes. The author is clearly serious since this chapter has by far the most homework exercises. Chapter 9, Business Accounting Methods, is in some ways a continuation. It is probably worth reading since it will help new engineers interpret their company's profit-and-loss statements. Chapter 12 on design also overlaps with the usual senior design courses.

Chapters 10 and 11 cover the legal framework and ethics of an engineering career, respectively. Although written from the civil engineering point-of-view, they should also prove useful to chemical engineers. In fact, this viewpoint may be particularly useful given the civil engineer's heightened sensitivity to liability issues and professional responsibility. The examples are civil engineering examples, but any engineer can appreciate them.

The Appendices contain the ASCE Code of Ethics, the IEEE Code of Ethics, the College Placement Council Principles for Professional Conduct, and excerpts from the Boeing Company's Business Conduct Policy and Guidelines. The fourteen principles of the government code of ethics are included in Chapter 11. This wealth of information could be used in case studies to show that what may be ethical for one engineer could be unethical for another. There are also some good scenarios for discussion in the chapter's exercise section.

Chapter 13, Role and Selection of Consultants, and Chapter 14, Marketing Technical Services, are of much more interest to beginning civil engineers than chemical engineers. At some point, however, chemical engineers may find this information useful.

The conclusions of the last chapter, The Future and You, can be summed up in one sentence: Be flexible and ready for change.

How can a chemical engineering professor best use this book? First, read selected parts. Second, recommend it to students who are going to work, whether it is COOP, summer, or post-graduation. Third, consider using parts of it as a text in a senior seminar, or as a supplemental text in a senior design course. I estimate that the most important parts of this book could easily be covered in the typical one-hour-per-week senior seminar.

Overall, I think this is a great book for civil engineers and a good book for chemical engineers. □