

Basic Communication Skills for Technology





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PREFACE TO THE TEACHER



This book has been written for writing classes in a technical curriculum, particularly curriculums in which traditional English books have been ineffective. The primary objective is to provide practical applications of traditional writing skills. Technical students generally present two challenges: they have intense interests in technology, and they have little interest in the language arts. English is not considered a precise science. It is this imprecision that I feel is responsible for the fear and uncertainty experienced by many technical writing students. The solution is to present writing by drawing from their technical subjects.

The approach I have found successful is to use familiar technical vocabulary and concepts to demonstrate less familiar writing strategies and principles, and to encourage students to articulate and organize technical information with precision.

The readings are provided as a springboard into the writing topic and exercises. Each reading could be used to initiate discussions, research, or additional writing assignments. The writing topics are those I consider most relevant for electronics students. At the same time, I have chosen to show the dynamics of language by relating technical language to word derivation, spelling, usage, grammar rules, and general mechanics of writing.

Every writing teacher has personal preferences on the sequencing of various aspects of writing, including the studies of grammar and mechanics. Variations in chapter sequence may be preferred. Four review chapters are provided to reinforce specific skills from the previous few chapters.

I would recommend that the grammar and mechanics units be covered by every student. I have provided pre- and post-tests for this reason. Even though many students are already familiar with some of these skills to some degree, the applications in technical writing are sometimes difficult, even for students who have successfully completed a college composition class. I would suggest assigning one of the grammar/mechanics units each week, to be completed as homework or lab work. These units were designed to be self-teaching and need little explanation.

The appendices, particularly Appendices 2 and 3, are provided as supplemental work, but merit being assigned as homework, as well.

I invite comments and reactions to the book by you and your students. The Teacher's Manual includes an answer key, sample responses to the exercises, pre- and post-tests, and supplemental exercises for the grammar and mechanics topics.

I have used the *MLA Handbook* and *Webster's New World Dictionary, Second College Edition* as references. Other references may differ on rules, and accepted practices may change. Such is the nature of language.

Andrea J. Rutherford

PREFACE TO THE STUDENT



Your technical skills will be an important factor in getting started in your career. However, if the technical skills of two candidates are equal, the decision for hiring (or promoting) is usually based on the ability to communicate. In some jobs, communications skills are so vital that poor writers or speakers will not be considered, no matter what level of expertise they have in technical skills. To confirm the importance of communication skills in technology, read the "messages from industry" that follow this introduction. Leaders of major electronics firms have offered their personal stands on the value of good communication.

This book was written to teach the types of writing skills you will need to know in a career. You will not write poetry or plays or stories. What you write as you begin a technical career will not necessarily have to be creative or catchy. You will be recounting the facts as you see them; therefore, being able to get the message across clearly and accurately is a survival skill in the technical world.

Before you get started, I want to tell you how to use this book. You will be using a systems approach to communication. A system is an arrangement of related, individual elements that, together, form a unity. Language has several individual elements, as demonstrated in each chapter of this book. Each chapter has five sections. The first section is an article to READ, followed by sections on WRITING, SPELLING, VOCABULARY, and WORD WATCH.

The reading articles have been chosen not only to present examples of good writing but also to provide useful technical or professional information. Too often, students think that facts come only from textbooks (high in information) and entertainment comes from fiction or magazines (high in interest). The articles you will read consist of facts presented in an interesting way. You may encounter new words, and if so, please underline the words and keep reading. Sometimes you will figure out new words by their context, the words around them. Look up the words that you have not figured out after you have finished reading. Then reread the sentences the words were in to see how to use them. Finally, answer the comprehension

questions at the end of the article. They were written to help you interpret, organize, and respond to what you have read.

The writing sections deal with one primary writing skill at a time. The skills are those most useful to technical people. In the first half of the book, you will write mainly paragraphs, and in the second half you will write reports and letters. The assignments are similar to the duties of technicians on the job. Get the practice you need now for the types of writing expected of you later.

The spelling sections review some spelling patterns that are reliable. They will also give you a "crutch" or helpful aid to remember correct spellings of tricky words. Poor spelling is sloppy and unprofessional. Since writing takes time, thought, and effort, it seems senseless to degrade our own work with misspellings—it's almost like wearing an expensive shirt inside-out.

The vocabulary sections attempt to bring some order to the haphazard collection of foreign roots, prefixes, and suffixes that form technical words. Latin and Greek, particularly, are responsible for most of the difficult words that we encounter in technology. These sections will let you practice analyzing words to determine their meanings.

Finally, the word watch sections review groups of easily confused and misused words. Sometimes the placement of one letter completely changes the meaning of a word, as in *tough* and *though*. Other times, two related words, such as *affect* and *effect*, will be studied to determine their correct usage.

Following the chapters, two sections will review the fundamental rules of composing clear and correct sentences: grammar and mechanics. The grammar/sentence structure units deal with the components of language: individual words and groups of words and their functions in communication. These units are necessary to build a foundation for understanding our dynamic and versatile language. Just as science is guided by a limited set of theories and principles, English is guided by a limited set of rules. Limited does not mean a small number, just a learnable number. Unfortunately, some students have already given up trying to sort out the rules and their applications. So as you are working your way through these units, you will be asked to examine how words affect communication.

The mechanics units deal with the tools of our language: symbols, abbreviations, numbers, and punctuation. The first and longest unit reviews the comma, which is often perceived as something between a tyrant and a chameleon by many writers. The mechanics units will give you practice using the tools of writing effectively.

At the very end of the book are appendices which offer additional information. Look through them to see what is offered.

Learning the techniques of effective writing requires thought and practice. Whatever effort you put in, however, will pay off—in this course and in your career. Consider this book as a ladder to career advancement. And good luck.

Andrea J. Rutherford

ACKNOWLEDGMENTS



This book is the result of many years of learning from instructors, colleagues, and students. I would like to collectively thank all of them for their individual contributions, large and small.

I would particularly like to acknowledge some people who shared their professional experiences with written communication. They each give me the tools that I needed to apply general writing principles and examples to specific careers. They include Tony Cook and Wayne Wofford, Gwinnett Area Institute of Technology; Sonny Cox, Sonny's Service Center; Earl Friedell and Shirley McCree, DeKalb Technical Institute; David Hornbeck, Southern College of Technology; and David Hurst, State Farm Corporation. In addition, I would like to thank the faculty and students of DeVry Institute of Technology, Atlanta, for freely sharing of their electronics and computer science expertise. Despite my many sources, however, any technical inaccuracies in this book are solely my own.

My Prentice-Hall editors, Sharon Jacobus, Eileen O'Sullivan, and Alice Barr, were artfully encouraging and understanding. My reviewers, especially Mary Parken Lindquist, provided criticisms that sharpened my focus and language.

And of course, I could not have continued without the support and concern of my family. My husband, Tom, was once again willing to share his professional advice, his personal attention, and the dining-room table. This book also allowed me a unique opportunity to pick the brains of my technically trained brothers. I called on them regularly as I moved into their fields, and I appreciate their able assistance. My parents instilled the confidence and the conscience that told me to finish what I started. And so I dedicate this book to all of them.

*To Tom, and to Maxine, Richard, and Duane Ottum,
and the late Andy Ottum, with love.*

MESSAGES FROM INDUSTRY



Tomorrow's problem will not be the communication of data but more importantly, 'information.' Data abounds. Useful information is still unfortunately sparse.

Matthew A. Kenny, President
Racal-Milgo, Inc.
Sunrise, Florida

The best ideas in the world are useless unless they can be communicated to others. By the word 'communication' I mean that there's not only reception, but understanding of the information conveyed. Miscommunication of information not only destroys many great ideas, but causes untold waste in daily business activities.

Richard W. Oliver
Assistant Vice-President
Nothern Telecom Limited
Nashville, Tennessee

The ability to speak and write clearly is not only important to the communication of technical concepts, it is an essential part of the innovation process itself. Translating an idea into the written word is one of the better ways of validating the soundness of one's thinking.

Ian M. Ross, President
AT&T Bell Laboratories
Holmdel, New Jersey

Your knowledge is only as valuable as your ability to communicate it to someone else.

Gerald E. Schultz, President
Bell & Howell Company
Skokie, Illinois

... Communications skills are the second most important [skill] that any technical person can learn, and the first is learning to learn. Without communication skills, however, doing the most important is much more difficult than it needs to be. Someone who has already attained communication skills is ready to move ahead more quickly, for he must learn them to move ahead at all.

Court Skinner
Manager, Advanced Technology
National Semiconductor
Santa Clara, California

One is not evaluated on technical skills alone, but also on the image one presents while communicating.

Keith R. Welker, Personnel
Administrator
Hughes Aircraft Company
El Segundo, California

CONTENTS



PREFACE TO THE TEACHER	xi
PREFACE TO THE STUDENT	xiii
ACKNOWLEDGMENTS	xv
MESSAGES FROM INDUSTRY	xvii

PART I **Foundations** 1

CHAPTER 1 **GETTING STARTED** 3

Reading: <i>Technical Vocabulary</i>	3
Writing: <i>Getting Started</i>	7
Spelling: <i>Plurals</i>	13
Vocabulary: <i>Latin and Greek Number Roots</i>	16
Word Watch: <i>A/An/And To/Two/Too</i>	18

CHAPTER 2 **COMPLETENESS** 20

Reading: <i>Wardrobe: The First Step to Your Professional Image</i>	20
Writing: <i>Topic Sentences</i>	23
Spelling: <i>Adding LY and LLY</i>	25
Vocabulary: <i>Negative Prefixes</i>	26
Word Watch: <i>Wear/Were/We're/Where</i>	28

CHAPTER 3	CONCISENESS	29
	Reading: <i>Shedding Light on Today's Lasers</i>	29
	Writing: Writing a Summary	32
	Spelling: IE/EI	34
	Vocabulary: Roots SPEC and SON	35
	Word Watch: They're/Their/There	35
CHAPTER 4	CLARITY	37
	Reading: <i>Taking the Noise Out of Technical Writing</i>	37
	Writing: Corrections and Comparisons	41
	Spelling: Doubling the Final Consonant	47
	Vocabulary: SUB/SUPER Prefixes	48
	Word Watch: Used, Supposed	49
CHAPTER 5	REVIEW	51
	Reading: <i>Stress: A Deadly Wear and Tear</i>	51
PART II		
Planning a Technical Report		61
CHAPTER 6	COMPARISON AND CONTRAST	63
	Reading: <i>Grace, Style, and Intuition Contribute To Employee Success in Business</i>	63
	Writing: Description, Comparison and Contrast	65
	Spelling: Using Numbers	70
	Vocabulary: Retro/Circum/Intro/Intra/Inter	72
	Word Watch: T"OUGH" Words	73
CHAPTER 7	CAUSE AND EFFECT	75
	Reading: <i>Introduction to the Scientific Method</i>	75
	Writing: Cause and Effect/Formal Lab Reports	77
	Spelling: Dropping the Final E	85
	Vocabulary: Other Number Prefixes (Mono/Bi/Semi/Poly)	87
	Word Watch: Effect, Affect	88
CHAPTER 8	REVIEW	90
	Reading: <i>Coping with Stress on the Job</i>	90

PART III**Writing a Technical Report****99****CHAPTER 9****DESCRIPTIVE REPORTS****101**Reading: *Working with Robots: The Real Story* 101

Writing: The Descriptive Report 104

Spelling: ANCE/ENCE Endings 109

Vocabulary: Proto/Trans/Neo 110

Word Watch: Accept/Except 111

CHAPTER 10**PREPARING GRAPHICS****113**Reading: *Add Impact with Graphics* 113

Writing: Preparing Graphics 117

Spelling: Double Trouble 127

Vocabulary: Tele/Phono/Photo/Graph/Gram 128

Word Watch: Lose/Lost/Loss/Loose/Loosen 130

CHAPTER 11**PROCESS REPORTS****132**Reading: *Space Technicians Service the Satellites* 132

Writing: The Process Report 137

Spelling: Getting wISE to IZE/YZE 139

Vocabulary: Micro/Macro 141

Word Watch: Advice/Advise 141

CHAPTER 12**REVIEW****143**Reading: *Message by Light Wave* 143**PART IV****Business Communications****153****CHAPTER 13****IN-HOUSE COMMUNICATIONS****155**Reading: *Driving Out the Devils of Communications* 155

Writing: Memos and Forms 159

Spelling/Vocabulary: Seed Roots 169

Word Watch: Past/Passed 172

CHAPTER 14 **BUSINESS LETTERS** **174**

- Reading: *Turning Confrontation into Communication* 174
- Writing: Business Letters 177
- Spelling: IBLE/ABLE Endings 188
- Vocabulary: GRAD/GRESS Roots 190
- Word Watch: Stationary/Stationery Compliment/Complement 191

CHAPTER 15 **REVIEW** **193**

- Reading: Ride the Tech Wave or Be Swamped by It 193

PART V
Grammar Units **199**

- Unit 1** Subjects and Verbs 201
- Unit 2** Fragments 210
- Unit 3** Compound Sentences 215
- Unit 4** Complex Sentences 220
- Unit 5** Subject/Verb Agreement 229
- Unit 6** Prepositional Phrases 235
- Unit 7** Pronouns 240
- Unit 8** Pronoun Reference 245
- Unit 9** Modifiers 248
- Unit 10** Parallelism 256
- Unit 11** Avoiding Shifts 262
- Unit 12** Avoiding Sexism 268
- Unit 13** Transition Words 271

PART VI
Mechanics Units **275**

- Unit 1** Commas 277
- Unit 2** Apostrophes 286
- Unit 3** Quotations 290
- Unit 4** Other Punctuation Marks 295
- Unit 5** Abbreviations and Acronyms 301
- Unit 6** Capital Letters 303

APPENDIX 1	COMMON SYMBOLS AND ABBREVIATIONS	307
APPENDIX 2	TIPS FOR TYPING AND WORD PROCESSING	310
APPENDIX 3	TECHNICAL REPORT FORMAT	314
APPENDIX 4	SPELLING AND MISUSED WORDS	325
APPENDIX 5	IRREGULAR VERBS	328
	INDEX	331

PART

I

FOUNDATIONS

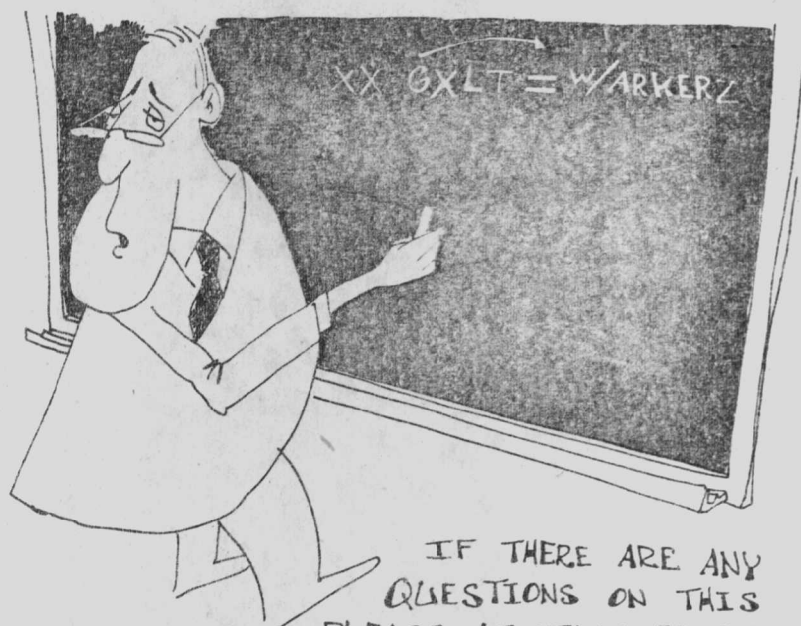
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Chapter 2 *Completeness*

Chapter 3 *Conciseness*

Chapter 4 *Clarity*

Chapter 5 *Review*



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