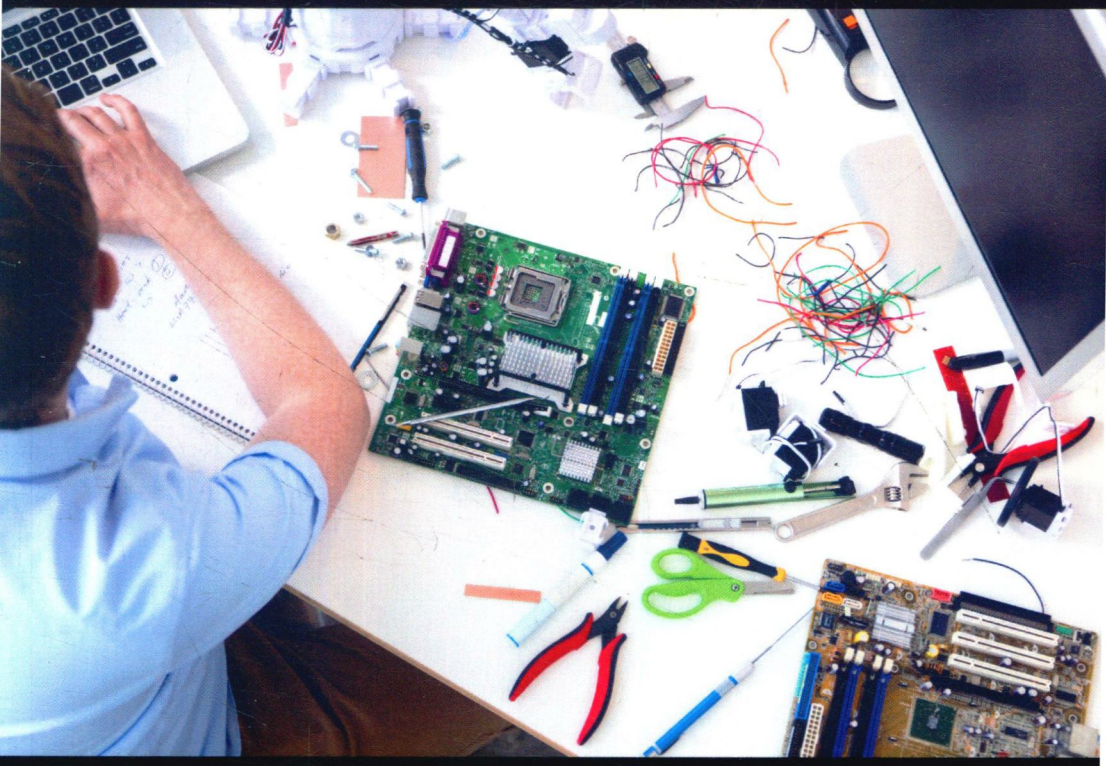
IEEE PCS Professional Engineering Communication Series
Traci Nathans-Kelly, Series Editor

The IEEE Guide to Writing in the Engineering and Technical Fields

David Kmiec • Bernadette Longo



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Helps both engineers and students improve their writing skills by learning to analyze target audience, tone, and purpose in order to effectively write technical documents

This book introduces students and practicing engineers to all the components of writing in the workplace. It teaches readers how considerations of audience and purpose govern the structure of their documents within particular work settings. *The IEEE Guide to Writing in the Engineering and Technical Fields* is broken up into two sections: "Writing in Engineering Organizations" and "What Can You Do With Writing?" The first section helps readers approach their writing in a logical and persuasive way as well as analyze their purpose for writing. The second section demonstrates how to distinguish rhetorical situations and the generic forms to inform, train, persuade, and collaborate.

The emergence of the global workplace has brought with it an increasingly important role for effective technical communication. Engineers more often need to work in cross-functional teams with people in different disciplines, in different countries, and in different parts of the world. Engineers must know how to communicate in a rapidly evolving global environment, as both practitioners of global English and developers of technical documents. Effective communication is critical in these settings.

The IEEE Guide to Writing in the Engineering and Technical Fields:

- Addresses the increasing demand for technical writing courses geared toward engineers
- Allows readers to perfect their writing skills in order to present knowledge and ideas to clients, government representatives, and the general public
- Covers topics most important to the working engineer

The IEEE Guide to Writing in the Engineering and Technical Fields is a handbook developed specifically for engineers and engineering students. Using an argumentation framework, the handbook presents information about forms of engineering communication in a clear and accessible format. This book introduces both forms that are characteristic of the engineering workplace and principles of logic and rhetoric that underlie these forms. As a result, students and practicing engineers can improve their writing in any situation they encounter, because they can use these principles to analyze audience, purpose, tone, and form.

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Cover Design: Wiley
Cover Image: © Hero Images/Gettyimages

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ISBN 978-1-119-07013-9

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Bernadette Longo

IEEE PCS Professional Engineering Communication Series

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Library of Congress Cataloging-in-Publication Data is available.

ISBN: 978-1-119-07013-9

Printed in the United States of America.

10 9 8 7 6 5 4 3 2 1

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IEEE Press
445 Hoes Lane
Piscataway, NJ 08854

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A Note from the Series Editor

With this book, *The IEEE Guide to Writing in the Engineering and Technical Fields*, the IEEE Professional Communication Society (PCS) continues its work to help engineers, technical professionals, scientists, researchers, teachers, and students alike make their work easier, more clear, and better targeted for dispersing information. Wiley-IEEE Press and the PCS are proud to add this guide to our book series titled *Professional Engineering Communication.* This guide, authored by David Kmiec and Bernadette Longo, is a wonderful entry point into reconsidering the technical message, the shape it will take, the readership it will inform, and the mechanical prowess to make it professional. Readers will not only find here some basics about mechanics and purpose, but also come to understand the deeper considerations for writing certain types of technical documents and how to achieve their purpose.

The authors bring their considerable experience in guiding technical professionals, engineering practitioners, and even students to this volume. Even a quick perusal of this volume will realign your purpose, tone, and outcomes when diligently applied.

The series has a mandate to explore areas of communication practices and application as applied to the engineering, technical, and scientific professions. Including the realms of business, governmental agencies, academia, and other areas, this series has and will continue to develop perspectives about the state of communication issues and potential solutions when at all possible.

While theory has its place (in this book and this series), we always look to be a source where recommendations for action and activity can be found. All of the books in the fast-growing PEC series keep a steady eye on the applicable while acknowledging the contributions that analysis, research, and theory can provide to these efforts. There is a strong commitment from the Professional Communication Society of IEEE and Wiley to produce a set of information and resources that can be carried directly into engineering firms, technology organizations, and academia alike.

For the series, we build on this philosophy: at the core of engineering, science, and technical work is problem solving and discovery. These tasks require, at all levels,

talented and agile communication practices. We need to effectively gather, vet, analyze, synthesize, control, and produce communication pieces in order for any meaningful work to get done. This book, like others in the series before it, contributes to that vision.

Traci Nathans-Kelly, Ph.D.

About the Authors

Dave Kmiec coordinates undergraduate technical writing for the Department of Humanities at New Jersey Institute of Technology. He also consults for government agencies and engineering services and manufacturing firms, which he helps them establish knowledge management practices and effective workflows for digital and print publications. Dr. Kmiec earned his Ph.D. in Rhetoric and Technical Communication from University of Minnesota, where his research focused on engineering communication and the cultural history of engineering as a profession. He also holds an M.S. in Technical Writing from North Carolina State University and B.A. degrees in Chemistry and English.

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