REPORTING RESULTS

This brief guide is ideal for science and engineering students and professionals to help them communicate technical information clearly, accurately, and effectively. The focus is on the most common communication forms, including laboratory reports, research articles, and oral presentations, and on common issues that arise in classroom and professional practice. This book will be especially useful to students in a first chemistry or physics laboratory course. Advanced courses will often use the same formatting as is required for submission to technical journals or for technical report writing, which is the focus of this book. Good communication skills are required in all forms of technical writing and presentation. This book is designed to help the reader develop effective communication skills. It is also an ideal reference on stylistic and grammar issues. Unlike most texts, which concentrate only on writing style, this book also treats oral presentations, graphing, and analysis of data.

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Reporting Results

A PRACTICAL GUIDE FOR ENGINEERS AND SCIENTISTS

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Preface

This brief guide was written for science and engineering students and professionals to help them communicate technical information clearly, accurately, and effectively. The focus is on the most common communication forms and the most common issues that arise in classroom and professional practice.

Freshman chemistry or physics will be the introduction to technical report writing for many college students. The format for writing these laboratory reports is most often specified by the instructor. This guide will be useful in developing a good technical writing style and for preparing tables and figures for those reports. Upper-level courses often use the same formatting as is required for submission to technical journals or for technical report writing, which is the focus of this book. Graduate students and professionals encounter many of the same problems
in technical communication. Good communication skills are required in all forms of technical writing and presentation. This book is designed to help the reader develop effective communication skills and to be a reference on stylistic and grammar issues. Unlike most texts on writing style, this book also treats oral presentations, graphing, and analysis of data.

The authors’ intention is to give the reader the basics of technical communication in the first chapter and then to treat in detail the various forms of technical communication. The structure of the book is as follows:

Chapter 1 provides a general discussion of technical communication.
Chapter 2 covers writing technical reports and archival papers.
Chapter 3 discusses writing letter reports, which are common in industry.
Chapter 4 gives general guidelines for oral presentations.
Chapter 5 treats the effective use of tables and figures, with an emphasis on the science of graphing.
Chapter 6 covers some basic concepts in the statistical analysis of data.
Chapter 7 offers suggestions for writing resumés.
Preface

The appendices treat common errors in writing, including punctuation and commonly confused words; general information, including the international system of numerical prefixes and units and the Greek alphabet; and uses of straight lines to represent some mathematical functions.

This guide is intended for all science and engineering majors. The careful reader may notice that many of the examples are taken from the authors’ experiences in materials science and engineering.

Clear communication is a challenge that often does not appeal to engineers and scientists. However, the responsibility of ethical scientists and engineers is to ensure that humanity benefits from their knowledge. If one is unable to communicate one’s ideas effectively, then for all practical purposes the work is lost. Academic grades and future careers are dependent on good communication skills. Becoming a good writer is a lifelong journey, and the authors hope that this book provides a quick reference for readers in both their academic and their professional careers.
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