Preface to First Edition

In this book we have attempted to provide a comprehensive guide to research and how it is conducted. If research is seen as a continual journey then the aim of this text is to provide a road-map for the beginner.

The book covers every facet of the research process: finding and defining a suitable problem, performing literature surveys, conducting the research, analysing the results, and reporting the findings.

The text is intended for the beginning postgraduate or advanced undergraduate student, and no prior knowledge of research is assumed. It includes specific coverage of the techniques and methods of research used in science, engineering and technology, as well as those used in the human sciences. The book is designed for a one-semester course, but has sufficient material for a year-long course if the lecturer opts for a detailed treatment of all chapters. It is also appropriate for new researchers needing a guide for self-study.

A particular feature of the book is its concentration on South Africa, in contrast to the normal European or North American focus. While the research process may be the same, the system of universities and technikons, the funding bodies, and the country’s research needs are not. Examples and case studies used are country-specific in order to make the text relevant to the South African reader.

The book is divided into five parts, each of which is largely self-contained.

Part 1 is on how to get started. This includes beginning postgraduate study, obtaining funding, the research process, preparing a statement of the research problem, and obtaining information from the literature.

Part 2 deals with the design of research and the collection of data. This includes sampling, the experimental method, laboratory work, simulation, and collecting data from people.

Part 3 deals with the analysis of data. It explains how to organize, summarise and depict data, and provides a range of tools for statistical estimation and testing. No prior knowledge of statistics is assumed.

Part 4 deals with scientific writing, including questions of style and referencing, and describes formats for reports such as theses, dissertations, and funding proposals.

Part 5 deals with broader issues in research. In addition to dealing with issues such
as research ethics and the development of research thought, it also contains a chapter devoted to South Africa’s particular research needs.

Discussion questions and exercises are provided at the end of the chapter. Answers to selected exercises appear in Appendix G.

The referencing system used in this text is the ‘FTL’ (first-three-letters) scheme, which is discussed in Chapter 12 and in Appendix A.
Preface to Second Edition

In the five years since the first edition, much has changed and much hasn’t changed. The Internet has flourished, both as a communication medium and as the home of the world-wide-web. The pace of and amount of research continues to grow at a bewildering rate. Every day it becomes more important to be able to distil the real information from the mountains of data that we are bombarded with, and which the Internet provides. At the same time, the fundamental methods of research have not changed.

The text has been revised to reflect these trends: the growing importance of the Internet, of other styles of research, and of issues in research. On the other side, the coverage of statistics has been slightly reduced. Nevertheless, the edition maintains a more scientific emphasis than most books on research methodology. And more importantly, I have attempted to keep to the original goal of a to-the-point introduction to research and its methods.

Sadly, one of the authors Stuart Melville passed away in 1997.
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