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DIGITAL TECHNIQUES

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Preface

The explosive growth of digital electronics has affected the life of almost everyone. This book provides coverage of aspects of digital technology ranging from basic gates to the design of digital systems.

Digital technology is wide-ranging and this fact is reflected in TEC Certificate and Diploma courses as well as in TEC Higher Certificate and Diploma courses. The aim of the book is to provide a sound introduction to Digital Techniques associated with these courses. Students attending other courses which include digital technology will also benefit from reading the book.

The eleven chapters provide a solid introduction to digital technology beginning with chapters on basic logic functions and gates, leading to the types of semiconductors used and to integrated circuit technology. A wide range of logic families are described including DTL, TTL, ECL, MOS and I²L. There follows two chapters devoted to Boolean algebra and to the use of Karnaugh maps, which form the basis of many design studies. Binary arithmetic methods are introduced in chapter 9, together with binary codes and error detection. The ubiquitous pocket calculator and the microprocessor could not operate without counters, shift registers and storage systems and these are introduced in chapters 10 and 11. Included in the final chapter are semiconductor storage devices including RAMs and ROMs together with ferrite ring core stores, magnetic bubble devices and charge coupled devices.

I would like to acknowledge the assistance, tolerant understanding and encouragement of my wife during the preparation of this book.

NOEL M. MORRIS