

contents

PART ONE

Technical Drawing and Design

- 1 The Graphic Language and Design 1
- 2 Instrumental Drawing 13
- 3 Lettering 63
- 4 Geometric Constructions 87
- 5 Sketching and Shape Description 125
- 6 Multiview Projection 153
- 7 Sectional Views 203
- 8 Auxiliary Views 229
- 9 Revolutions 253
- 10 Shop Processes 267
- 11 Dimensioning 297
- 12 Tolerancing 335
- 13 Threads, Fasteners, and Springs 355
- 14 Design and Working Drawings 391
- 15 Reproduction and Control of Drawings 487
- 16 Axonometric Projection 497
- 17 Oblique Projection 529
- 18 Perspective 543

PART TWO

Descriptive Geometry

- 19 Points, Lines, and Planes 569
- 20 Parallelism and Perpendicularity 603
- 21 Intersections 619
- 22 Developments 643
- 23 Line and Plane Tangencies 657
- 24 Cartography, Geology, and Spherical Geometry 671
- 25 Graphical Vector Analysis 687

PART THREE

Graphs and Graphical Computation

- 26 Graphs 707
- 27 Alignment Charts 739
- 28 Empirical Equations 765
- 29 Graphical Mathematics 781
- Appendix 801
- Index 861

contents

PART ONE

Technical Drawing and Design

- 1 The Graphic Language and Design 1
- 2 Instrumental Drawing 13
- 3 Lettering 63
- 4 Geometric Constructions 87
- 5 Sketching and Shape Description 125
- 6 Multiview Projection 153
- 7 Sectional Views 203
- 8 Auxiliary Views 229
- 9 Revolutions 253
- 10 Shop Processes 267
- 11 Dimensioning 297
- 12 Tolerancing 335
- 13 Threads, Fasteners, and Springs 355
- 14 Design and Working Drawings 391
- 15 Reproduction and Control of Drawings 487
- 16 Axonometric Projection 497
- 17 Oblique Projection 529
- 18 Perspective 543

PART TWO

Descriptive Geometry

- 19 Points, Lines, and Planes 569
- 20 Parallelism and Perpendicularity 603
- 21 Intersections 619
- 22 Developments 643
- 23 Line and Plane Tangencies 657
- 24 Cartography, Geology, and Spherical Geometry 671
- 25 Graphical Vector Analysis 687

PART THREE

Graphs and Graphical Computation

- 26 Graphs 707
- 27 Alignment Charts 739
- 28 Empirical Equations 765
- 29 Graphical Mathematics 781

Appendix 801

Index 861