







Alan Darbyshire

Mechanical Engineering

BTEC National Level 3 Engineering Specialist Units



Contents

Acknowledgementsv
Introductionvii
Chapter 1 Further Mechanical Principles and Applications
Engineering Structures
Chapter 2 Advanced Mechanical Principles and Applications
Uni-axial and Complex Loading 98 Bending in Beams 105 Torsion in Power Transmission Shafts 115 Resultant and Relative Velocity 123 Plane Linkage Mechanisms 128 Natural Vibrations 134
Chapter 3 Applications of Mechanical Systems and Technology
Lubricants and Lubrication Systems.152Engineering Components161Mechanical Power Transmission Systems175Plant Equipment and Systems201
Chapter 4 Properties and Applications of Engineering Materials219
Atomic Structure of Materials
Chapter 5 Engineering Design
Knowing How the Design Process Operates When Dealing with Customers
Function

Chapter 6 Electro, Pneumatic and Hydraulic Engineering Materials333