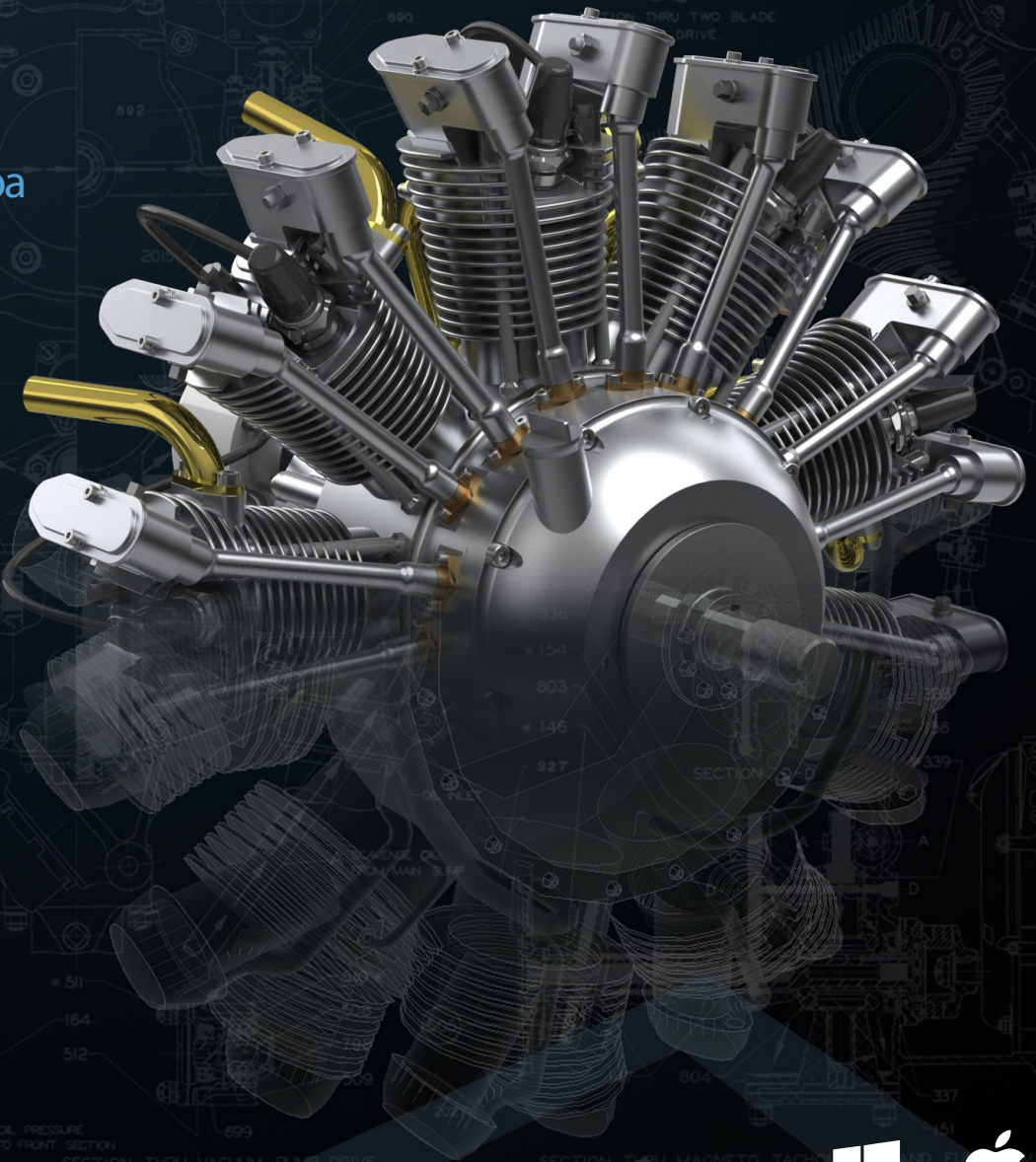


Visualization & Engineering Design Graphics With Augmented Reality

Jorge Dorribo Camba
Jeffrey Otey
Manuel Contero
Mariano Alcañiz



Windows 8



Mac OS

Visit the following websites to learn more about this book:



[amazon.com](https://www.amazon.com)

[BARNES & NOBLE](https://www.barnesandnoble.com)

[Google books](https://books.google.com)

Table of Contents

INTRODUCTION	9
CHAPTER 1. SKETCHING AND LETTERING	17
1. INTRODUCTION	18
2. SKETCHING	19
A. SKETCHING TOOLS	
B. SKETCHING TECHNIQUES	
3. LETTERING	28
4. EXERCISES	30
CHAPTER 2. ORTHOGRAPHIC PROJECTION	43
1. INTRODUCTION	44
2. ORTHOGRAPHIC PROJECTION	45
3. PROJECTION METHODS	47
4. ALPHABET OF LINES	48
5. VIEW SELECTION	49
6. CONVENTIONAL PRACTICES	53
7. FORESHORTENING	54
8. ORTHOGRAPHIC PROJECTION AIDS	55
9. EXERCISES	57
CHAPTER 3. PICTORIALS	87
1. INTRODUCTION	88
2. PROJECTIONS	89
3. GENERAL PRACTICES FOR PICTORIAL DRAWINGS	91
4. OBLIQUE PROJECTIONS	92
A. SKETCHING OBLIQUE DRAWINGS	
5. AXONOMETRIC PROJECTIONS	96
A. ISOMETRIC PROJECTION	
B. SKETCHING ISOMETRIC DRAWINGS	
C. DIMETRIC PROJECTION	
D. TRIMETRIC PROJECTION	
6. PERSPECTIVE PROJECTION	105
A. SKETCHING PERSPECTIVE DRAWINGS	
7. EXERCISES	111
CHAPTER 4. SECTIONAL VIEWS	141
1. INTRODUCTION	142
2. SECTIONAL VIEWS	143
A. THE CUTTING PLANE	
B. HATCHING	
3. TYPES OF SECTIONAL VIEWS	148
A. FULL SECTIONS	
B. OFFSET SECTIONS	
C. HALF SECTIONS	
D. REVOLVED AND REMOVED SECTIONS	
E. BROKEN-OUT SECTIONS	

4. GENERAL AND CONVENTIONAL SECTIONING PRACTICES	153
A. UNHATCHED FEATURES	
B. CONVENTIONAL ROTATIONS	
5. BROKEN VIEWS AND CONVENTIONAL BREAKS	158
6. EXERCISES	161
CHAPTER 5. AUXILIARY VIEWS	183
1. INTRODUCTION	184
2. AUXILIARY VIEWS AND PLANES	185
3. GENERAL PRACTICES FOR AUXILIARY VIEWS	186
4. CONSTRUCTION OF AUXILIARY VIEWS	188
5. EXERCISES	195
CHAPTER 6. DIMENSIONING	215
1. INTRODUCTION	216
2. DIMENSIONING TERMINOLOGY	217
3. GENERAL DIMENSIONING RULES	218
A. DIMENSIONING STYLES	
B. DIMENSIONING SPACING	
C. USE OF LEADERS	
D. DIMENSIONS OUTSIDE VIEWS	
E. DIMENSIONS BETWEEN VIEWS	
F. OMISSION OF DIMENSION FEATURES	
G. CONVENTIONAL VS. BASELINE DIMENSIONS	
H. DO NOT CROSS DIMENSION LINES	
I. DO NOT OVER-DIMENSION	
J. USE OF REFERENCE DIMENSIONS	
K. DO NOT DIMENSION TO HIDDEN LINES	
L. DO NOT DIMENSION TO T-JOINTS	
M. DIMENSIONING ANGLED FEATURES	
N. DIMENSIONING CIRCLES	
O. DIMENSIONING HOLES AND CYLINDERS	
P. DIMENSIONING OBJECTS WITH ROUNDED ENDS	
Q. REPETITIVE FEATURES	
R. CHAMFERS, FILLETS, AND ROUNDS	
S. GENERAL NOTES	
T. FINISHED SURFACES	
4. MACHINED HOLES	238
5. EXERCISES	245
CHAPTER 7. TOLERANCES	265
1. INTRODUCTION	266
2. TOLERANCES	267
3. DIMENSIONAL TOLERANCES	268
A. GENERAL TOLERANCES	
B. LINEAR TOLERANCES	
I. TYPES OF FITS	
II. BASIC-HOLE AND BASIC-SHAFT SYSTEMS	
III. STANDARD FITS	
4. GEOMETRIC TOLERANCES	280
A. TOLERANCES OF FORM	
B. TOLERANCES OF PROFILE	
C. TOLERANCES OF ORIENTATION	
D. TOLERANCES OF LOCATION	
E. TOLERANCES OF RUNOUT	
5. EXERCISES	289
CHAPTER 8. THREADED FASTENERS	309
1. INTRODUCTION	310
2. FASTENERS	311
3. THREADED FASTENERS	312
4. BASIC DEFINITIONS	312
5. THREAD CHARACTERISTICS	313
A. DIRECTION	
B. LEAD	
C. FORM	
D. SERIES	
E. CLASS OF FIT	
6. THREAD SPECIFICATION	317
A. THREAD SYMBOLS	
B. THREAD NOTES	
7. HEAD AND DRIVE TYPES	321
8. BOLTS AND SCREWS	322
9. NUTS	323
10. UNTHREADED FASTENERS	324
11. EXERCISES	325
CHAPTER 9. WORKING DRAWINGS	335
1. INTRODUCTION	336
2. PAPER AND LAYOUT	337
3. STRUCTURE OF A SET OF WORKING DRAWINGS	338
A. ASSEMBLY DRAWINGS	
B. DETAIL DRAWINGS	
C. STANDARD PART NOTES	
4. EXERCISES	347
APPENDIX	369
I. TOLERANCE TABLES	370
II. THREAD TABLES	381