

Unit I - Introduction to Calculus (approximately 11 days)

Reference Materials: C = Advanced functions and Introductory Calculus (Harcourt 2002)
 WC = Worked examples in Calculus (Tam 2000)

Other Resources TI-84 = Texas Instruments graphing calculator
 E = MS Excel program on computer

Lesson	Topic	Practice work & Assessment
10	Review skills Slope, graphing, domain and range, radicals	C - p.72 #1-8(alt), 9(select few)
11A	Slope of the Tangent using slope	C - p.83 #1-6,15
11B	Slope of the Tangent by First Principals	C - p.83 #8,9,1,17
12A	Rate of Change	C - p.92 #1,3,4,5,6,7
12B	Rate of Change – Day 2	Quiz 11 C - p.92 #8-13
13A	Limit of a Functions	C - p.97 # 1-12(alt),15
13B	Limit of a Functions	C - p.97 # 1-12(alt) Graph worksheet
14A	Properties of Limits	C - p.105 #1-7
14B	Properties of Limits	C - p.105 #8-13 Property worksheet (1.2)
15	Continuity	Quiz 13 & 14 C - p.110 #1-10
16	Review	C - p.115 #1-12,17,18
	TEST	

Unit 2 - Derivative Function and Derivatives (approximately 17 days)

Reference Materials: C = Advanced functions and Introductory Calculus (Harcourt 2002)
 D = Calculus (Delgrade 1978)
 G = Calculus (Gage 1989)
 WC = Worked examples in Calculus (Tam 2000)

Other Resources TI-84 = Texas Instruments graphing calculator
 E = MS Excel program on computer

Lesson	Topic	Practice work & Assessment
21A	The Derivative Function	C - p.131 #1,2,3, 4-8
21B	The Derivative Function	C - p.131 #9,11,12,13
21C	Sketching the Derivative Function	Worksheet Board Work
22A	Derivatives of Poly Functions (constant, power, +/- rules)	Quiz 21 C - p.138 #2-5
22B	Derivatives of Poly Functions	C - p.138 #6-9(alt),10,12,14,9-21
23	Product Rule	Quiz 22 C - p.145 #1,2,3-6,7a,8
24	Quotient Rule	C - p.149 #2,4,5(alt),6,7,8,10,12
25	Composite Functions	Quiz 23 & 24 C - p.152 #1-9,12b
26	Derivative of Composite Function (chain rule)	C - p.158 #2-4, 9(alt), 8,11
27	Derivatives of Exponential Function	C - p.302 #3-9, 12,14
28A	Derivative of Natural Logarithm	C - p.309#3-6,8-11,13
28B	Derivatives of b^x and $\log x$	C - p.315 #1-3,4,6,7
28C	Logarithmic Differentiation	C - p.326 #1-7
29A	Trigonometric Differentiation – Day 1	G - p. 154 #1,8,25 D - p. 123 #1-5
29B	Trigonometric Differentiation – Day 2	G - p.154 #2,10,18,19,23 D - p.128 #1-8
29C	Review	C - p.330 #1-17(as needed) C - p.163 #1-12(as needed)
	TEST	

Unit 3 - Application of Derivatives (approximately 15 days)

Reference Materials: C = Advanced functions and Introductory Calculus (Harcourt 2002)
 D = Calculus (Delgrade 1978)
 G = Calculus (Gage 1989)
 WC = Worked examples in Calculus (Tam 2000)

Other Resources TI-84 = Texas Instruments graphing calculator
 E = MS Excel program on computer

Lesson	Topic	Practice work & Assessment
31	Rate of Change (revisited) - the derivatives Distance, velocity and acceleration	G - p.210 #1-16
32	Implicit Differentiation	C - p.178 #2,3(alt),4-7,9
33	Higher Order Derivatives	C - p.185 #1-8, 12,17
34A	Related Rates – day 1	Quiz 31 C - p.193 #1-7
34B	Related Rates – day 2	Quiz 32 C - p.187 #9-16,17
34C	Related Rates – day 3	C - p.194 #8-13,15
35	Maximum & Minimum on an Interval	C - p.200 #1-4(alt),5,6,8,10
	Max/Min on an interval- day 2	Optional
36A	Optimization Problems	C - p.206 #1-7
36B	Optimization Problems	Quiz 34 C - p.206 #8-11,15
36C	Optimization Problems with Exponential & Logarithmic functions	C - p.320 #2-5,6-8, 10,11,12
36D	Optimization in Economics & Science – day 1	C - p.213#1-6
	Optimization in Eco & Science – day 2	C - p.213#7-11
36E	Optimization problems with Trigonometric functions	D - p.210 #1-10
36	Review	C - p.219 #1-20(as needed) C - p.219 #20 - 31(as needed)
	TEST	

Unit 4 - Geometric Vectors (approximately 8 days)

Reference Materials: A = Geometry and Algebra (Harcourt 2002)
WA = Worked examples in Algebra (Tam 2000)

Other Resources TI-84 = Texas Instruments graphing calculator
E = MS Excel program on computer

Lesson	Topic	Practice work & Assessment
41A	Vector concepts - day 1	A - p.127 #1,2,4-6
41B	Vector concepts - day 2	A - p.128 #7-12
42	Geometric Vector in 2 dimensions (addition laws)	A - p.133 #1-13,16,17
43A	Resultant and Equilibrium Vectors	A - p.141 #1-8,10,11,16,24
43B	Force Vectors (tension, ramp & swing problems)	Quiz 41 & 41 A - p.142 #9,12-15,17-22
44	Velocity as a Vector	A - p.149 #1-11
45	Review	A - p.153 #1-17 (if needed) A - p.155 #1-8
	TEST	

Unit 5 - Algebraic Vectors (approximately 10 days)

Reference Materials: A = Geometry and Algebra (Harcourt 2002)
 WA = Worked examples in Algebra (Tam 2000)

Other Resources TI-84 = Texas Instruments graphing calculator
 E = MS Excel program on computer

Lesson	Topic	Practice work & Assessment
51A	Analytic Vectors in 2 Dimensions (2D)	A - p.166 #1-3,6,7cd,8ab,13,20ab
51B	Analytic Vectors in 3 Dimensions (3D)	A - p.166 #4,5,8def,9def,10abcd, 11,14,16,17,18,22
52	Operations with Analytic Vectors	A - p.172 #2-6(ace...),7cd,8-11, 14,15,16a
53A	Dot Product - day 1	Quiz 51 & 52 A - p.178 #2-10
53B	Dot Product - day 2	A - p.178 #12-15,17-19
54	Cross Product	Quiz 53 & 54 A - p.185 #2-7,10,15a
55A	Applications of Dot & Cross Products	A - p.192 #6,7a,9-13,15-17
55B	Work & Torque	A - p.192 #1,2,4,18
56	Review	A - p.194 #1-9,12,13a,14 A - p.197 #,1,2,5
	TEST	

Unit 6 - Lines in 2 & 3 Dimensions (approximately 6 days)

Reference Materials: A = Geometry and Algebra (Harcourt 2002)
 WA = Worked examples in Algebra (Tam 2000)

Other Resources TI-84 = Texas Instruments graphing calculator
 E = MS Excel program on computer

Lesson	Topic	Practice work & Assessment
61	Lines in 2 Dimensions (2D)	A - p.245 #2-12
62A	Scalar & Cartesian Equations of Lines	A - p.251 #1-9
62B	Angles between Lines Distance from a Line to a Point	A - p.246 #13,14a,15 A - p.252 #16cd, 12,14b
63	Lines in 3 Dimensions (3D)	Quiz 71 & 72 A - p.256 #1-4,6-9,11,12,13a
64	Intersecting Lines in 3D	A - p.263 #2,3abd,4abcd,5-7,8
65	Review	A - p.266 #2-8,10,11b,12,13,14b A - p.270 #1,2
	TEST	

Unit 7 - Planes (approximately 9 days)

Reference Materials: A = Geometry and Algebra (Harcourt 2002)
 WA = Worked examples in Algebra (Tam 2000)

Other Resources TI-84 = Texas Instruments graphing calculator
 E = MS Excel program on computer

Lesson	Topic	Practice work & Assessment
71	Vector and Parametric Equations of Planes	A - p.279 #1-11
72A	Scalar Equations of Planes	A - p.285 #1-10,12
72B	Angles between Planes Distance from a Plane to a Point	Quiz 81 & 82 A - p.313 #11,12 A - p.316 #7ab A - p.287 #13
73	Intersection of a Line and Plane	A - p.292 #1acd,2,3,6-8,11
Opt	Sketching Lines and Planes in 3 Dimensions	Worksheet Board questions
74A	Intersection of 2 Planes	A - p.293 #9,10
74B	Gaussian Elimination	A - p.300 #1,2,3,9
75	Intersection of 3 Planes using Matrices	A - p.300 #4,5,6 A - p.309 #5,6
75B	Intersection of 3 Planes using Matrices	A - p.308 #2,8,9
76	Review	A - p.312 #2-14,16-22
	TEST	

Unit 8 – Curve Sketching (approximately 8 days)

Reference Materials: C = Advanced functions and Introductory Calculus (Harcourt 2002)
WC = Worked examples in Calculus (Tam 2000)

Other Resources TI-84 = Texas Instruments graphing calculator
E = MS Excel program on computer

Lesson	Topic	Practice work & Assessment
81	Increasing and Decreasing functions	C - p.340 #1-8,11
82	Critical Points, Relative Max & Min	C - p.349 #1-8
83	Asymptotes: vertical, horizontal and oblique	Quiz 81 C - p.361 #1-5 C - p.361 #6-9
84	Concavity and Inflection Pts – Day 1	C - p.369 #1-4,5,8,9,10
85A	Curve Sketching – day 1	Quiz 82 C - p.375 #1a-f
85B	Curve Sketching – Day 2	C - p.375 #1g-1,2-4
86	Review	C - p.378 #1-13 (as needed)
	TEST	