AP Calculus BC Lesson Plans
Fall 2011

Andrew Nichols
Grady HS

Fall Semester

Weeks	Dates	Sections	Unit	Important Dates
1 – 8	8/8 – 9/30	1.7, H.1, 9.1 – 9.7	Polar Curves, Parametric Equations, Vectors & the Geometry of Space	Half-day, August 24 Labor Day, Monday Sept. 5 GHSGT Writing Test, Sept. 27
9	10/3 – 10/7	Review & Exam		Mid-semester 10/5
10 – 14	10/10 – 11/11	8.1 – 8.9	Infinite Sequences & Series	Fall Break, Oct. 10 – 11 PSAT, 10/12 Teacher PD (no school), Nov. 8
15 – 16	11/14 – 12/9	10.1 – 10.5	Calculus with Polar, Parametric, & Vector Functions	Thanksgiving, 11/21 – 25
17 – 18	12/12 – 12/29	Review & Exam		Economics EOCT, 12/10? End of Semester, 12/20

Spring Semester

Weeks	Dates	Chapters	Unit	Important Dates
1 – 3	1/4 – 1/27	Ch. 3 & 4	Applied Projects	MLK Day, No School, Jan. 17
4 – 5	1/30 – 2/10	Ch. 5	Techniques of Integration	Winter Break, Feb. 17 – 20
6 – 8	2/13 – 3/2	Ch. 6	Applications of Integration	
9	3/5 – 3/9	Review & Exam		
10	3/12 – 3/16	8.3 & misc.	Analyzing Series using Integrals	Early Release Day, 3/9 Mid-semester, 3/12 GHSGT, Mar. 19 – 23
11 – 12	3/19 – 3/30	7.2, 7.5, 7.6	Differential Equations	Spring Break, Apr. 2 – 6
13 – 15	4/9 – 4/27	Review		EOCTs, Apr. 23 – Apr. 27
16	4/30 – 5/4	Final Exam		EOCTs, Apr. 30 – May 4
17	5/7 – 5/11	AP Exam, 5/9		
18 – 19	5/14 – 5/22	Projects		End Semester, Tuesday May 22

Unit: Polar Curves, Parametric Equations, Vectors & the Geometry of Space

Objectives:

(1) Describe curves in 2 and 3 dimensions using parametric equations, converting between Cartesian and parametric representations when possible.
(2) Sketch parametric curves in 2 dimensions.
(3) Use parametric curves to describe inverse relations.
(4) Describe position in 3 dimensional space, including notation and the distance formula.
(5) Explore 3 dimensional surfaces using Cartesian equations.
(6) Describe vectors geometrically and algebraically in terms of magnitude, direction, and components.
(7) Manipulate vectors in both component form and in terms of unit vectors.
(8) Compute and interpret the dot product of two vectors algebraically and geometrically.
(9) Compute and interpret the cross product of two vectors algebraically and geometrically.
(10) Describe points and curves in 2 dimensions using polar coordinates and equations, converting between Cartesian, parametric, and polar representations when possible.
(11) Explore the cylindrical and spherical coordinates systems for 3 dimensions.

Weeks 1 – 2

Day 1: Tuesday, 8/9/11

Course introduction and classroom procedures.

Q&A for summer packet.

Summer packet due next class period.

Introduce Writing Project 1: The Company Picnic (due Friday, 8/19)

Day 2: Thursday, 8/11/11

1.7 Group Work 1: Name That Parameterization

1.7 Group Work 2: How Many Ways Can You Trace That Curve?

Objectives: (1) & (2)

Day 3: Monday, 8/15/11

1.7 Group Work 3: Lissajous Figures

Lab Project: Running Circles Around Circles (p. 82), due Tuesday, 8/23/11.

Objectives: (1) & (2)

Day 4: Wednesday, 8/17/11

Lab Project: Running Circles Around Circles (p. 82), due Tuesday, 8/23/11.

Objectives: (1) & (2)

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Day 5: Friday, 8/19/11

Quiz 2 (Parametric Equations & Curves)

Continue working on Lab Project which is due Tuesday, 8/23/11.

Writing Project 1 due today by 5 p.m via email.