

Semester 1 – Calculus 30

Semester 2 – PART 1 - AP Calculus AB topics (Feb 2-May 6)

Unit 1 Feb 2 – Mar 6

1. Inverse Trig Functions and their Derivatives-7.5/7.6 (Stewart Text)
 - a. 7.5 #1aceg, 2ace; 7.6 #1acegi,2
2. Inverse Functions and their derivatives (Finney p. 165)
 - a. p. 165 #27-29, handouts
 - b. AP Exam questions, in-class questions
3. Intermediate Value Thm / Rolle's Thm / Mean Value Thm (Finney Text p. 196)
 - a. p.202 #1, 4, 7, 9, 11, 12, 14, 47-49 ,51, 53, 56
4. Linear approximation
 - a. P. 242 #1-7, 11-14, 59

Exam 1 – Inverse Derivatives, IVT, Rolle's, MVT, Linear Approx – Mar 6

Unit 2 Mar 4 – 20

5. Average Value of a function (using graphing calc. for definite integrals)
 - a. P. 291 #11-14, 31-36, 49, 50
6. Fundamental Theorem of Calculus
 - a. Finney p 302 #1-16
7. Riemann Sums
 - a. P. 270 #5, 6, 18
 - b. P. 282 Rev. #1-6, Ex. #1,3,5,41-45
 - c. AP Central Handouts A, B, and C
8. Squeeze Theorem
 - a. Handouts and Finney p. 68 #59-62

Exam 2 – Ave Val, Fund Thm, Riemann, Squeeze Thm – Mar 20

Easter -----Mar 29-Apr 5 – AP Exam Prep will be assigned during the week off

Unit 3 Mar 21 - Apr 19

9. Differential Equations (also initial conditions)
 - a. Stewart 9.2 # 1,2,3,4
 - b. Finney p.327 #1-8, 11-17
10. Slope fields
 - a. Worksheet
 - b. Finney p. 328 #29-40, 51, 59, 61, 64
11. Separable differential Equations
 - a. P.357 #1-9 (first order)
 - b. P. 330 #68 (second order)
12. L'Hopitals rule
 - a. Finney P. 450 (8.2) #1-8, 16, 27, 28, 33, 49, 58, 62, 63, 68
13. Euler's Method (Finney p. 325)
 - a. Finney p. 328 #41-44

Exam 3 – Diff Equations, Slope Fields, L'Hopital's Rule, Euler's Method – Apr 19

Unit 4 – Apr 20 – 29

1. Solids of Revolution (Finney)
 - a. Disc method p. 406 #7, 10, 11, 13, 17
 - b. Washer Method p. 407 #8, 9, 15, 16, 17, 19
 - c. Cylindrical Shell Method p 407-8 #7-9 (Shell method), 33-38

Exam 4 – Solids of Revolution – Apr 29

Unit 5 – Apr 2-7, Apr 29 – May 12

AP Exam practice

- AP Classroom (website) review asn'ts, videos, and quizzes. These materials will prepare students for 'real life' AP exam type questions.
- Multiple-choice practice, primarily from previous AP exams.
 - o Multiple Choice test taking strategies are emphasized. Less emphasis on group work and more emphasis on developing personal understanding of concepts studied.
- Free-response practice, primarily from previous AP exams.
 - o Emphasis on complete solutions, including sketches, steps labeled with all work shown and concluding statements.
- Coaching on student development of comprehensive study summaries and "notes to self" which should prove useful not only for the AP final exams but also for future post-secondary mathematical studies.

- AP EXAM DATE: **May 13/24**

Unit 6- May 14 - 20

Major Project work periods following AP Exam

Project due – June 17

PART 2 - Calculus 30L topics (May 20 – June 17)

Unit 7 May 23 – Jun 17

2. Integration (Handouts)
 - a. By parts
 - b. Using Partial Fractions
 - c. Using trigonometric Substitution

Exam 7 – Integration Exam – Wed Jun 12

****AP Exam counts as "writing a math FINAL EXAM" for this course, so no AP Calc 30L final exam.***