

Syllabus
Mathematics 242, Fall 2008
Mr. Ortel

Course Description

Mathematics 242 will cover parts of chapters 4, 8, 9, 10, 15 of *Calculus: Early Vectors*, by James Stewart, including the following specific topics (as listed in the table of contents of that textbook): exponential functions and their derivatives, inverse functions, logarithmic functions, exponential growth and decay, inverse trigonometric functions, indeterminate forms and L'Hospital's rule, integration by parts, trigonometric integrals, trigonometric substitution, integration of rational functions by partial fractions, miscellaneous rationalizing substitutions, sequences, series, the integral test and the comparison test, ratio test, power series, representation of functions as power series, Taylor and MacLaurin series, binomial series, differential equations, first order linear equations, second order linear equations, nonhomogeneous linear equations. Emphasis will be placed on techniques of integration, on Taylor's series, and on the solution of second order differential equations with constant coefficients.

Office and Webpage

My office is Physical Sciences 402, and the current hours for consultation (which may change during the semester) will always be posted on the door of that office. Course material, in the form of pdf files, may be found on my webpage, <http://www.math.hawaii.edu/~marvin>, under the heading *Mathematics 242*. This material may be altered during the term if corrections are required. Any such alterations will be announced in class.

Tests

Three tests, each for 100 points, will be given during the term. Each test is 50 minutes long. Sample test problems can be found in the pdf file "Sample Test Problems" on my website. The dates on which the tests are administered can be found in the schedule below.

Final Examination

The final examination, for 100 points, is 120 minutes long and administered on the date and time specified in the schedule below. Sample examination problems can be found in the pdf file "Sample Test Problems" on my website. The reader will notice that, in addition to problems on differential equations, some of the examination problems involve the recitation of theorems, proofs, and derivations from earlier parts of the course.

Laboratory

Laboratory assignments and activities, for a possible total of 25 points, are determined by the laboratory instructor.

Homework

Homework assignments, for a possible total of 25 points (one point per assignment plus one free point), are listed in the schedule below.

Course Grades

Let "TestScores" denote the total of your scores on the three tests, let "ExamScore" denote your score on the final examination, let "Laboratory" denote the total points received for work during the laboratory periods, let "Homework" denote the total points received for homework, and set $p \equiv (\text{TestScores} + \text{ExamScore} + \text{Laboratory} + \text{Homework})/(4.5)$. The course grades are assigned according to the following scheme: $[0 \leq p < 40: \text{F}]$, $[40 \leq p < 45: \text{D-}]$, $[45 \leq p < 50: \text{D}]$, $[50 \leq p < 55: \text{D+}]$, $[55 \leq p < 60: \text{C-}]$, $[60 \leq p < 65: \text{C}]$, $[65 \leq p < 70: \text{C+}]$, $[70 \leq p < 75: \text{B-}]$, $[75 \leq p < 80: \text{B}]$, $[80 \leq p < 85: \text{B+}]$, $[85 \leq p < 90: \text{A-}]$, $[90 \leq p < 95: \text{A}]$, $[95 \leq p \leq 100: \text{A+}]$. Please retain your tests and homework assignments until you have received your grade for the course.

Schedule

In this schedule, the symbol string “(c.s; x, y, ..., z)” following a particular date signifies that solutions to problems x, y, ..., z from section s of chapter c of the textbook are to be turned in, as homework, at the beginning of the first class period after that particular date.

August 25 (4.1; 5,7,9 & 27-49 odd)
August 27 (4.2; 9-29 odd)
August 29 (4.3; 1-19 odd & 25-49 odd & 63-79 odd)
September 3 (4.4; 1-41 odd) & (4.5; 3,10,18)
September 5 (4.6; 1-19 odd & 20,21,22 & 30-55 odd)
September 8 (8.1; 1-25 odd & 43,44)
September 10 (8.2; 1-43 odd)
September 12 (study for Test I)
September 15 (study for Test I)
September 17 (study for Test I)
September 19 (Test I)
September 22 (8.3; 1-27 odd)
September 24 (8.3; 2-28 even)
September 26 (8.4; 1-9 odd)
September 29 (8.4; 11-53 odd)
October 1 (8.5; 1-15 odd)
October 3 (study for Test II)
October 6 (study for Test II)
October 8 (study for Test II)
October 10 (study for Test II)
October 13 (study for Test II)
October 15 (Test II)
October 17 (4.8; 1,5,9,13,17,21,25) & (10.1; 9-25 odd)
October 20 (10.2; 11-27 odd) & (10.3; 7-21 odd)
October 22 (10.4; 3,5,7 & 19-27 odd)
October 24 (10.5; 5-17)
October 27 (10.6; 3-21 odd)
October 29 (10.7; 3-11 odd & 15,17,29,33)
October 31 (10.8; 1-6)
November 3 (study for Test III)
November 5 (study for Test III)
November 7 (study for Test III)
November 10 (Test III)
November 12 (study pdf files specified in lecture)
November 14 (study pdf files specified in lecture)
November 17 (study pdf files specified in lecture)
November 19 (study pdf files specified in lecture)
November 21 (15.1; 1,3) & (15.2; 1,3)
November 24 (15.1; 5,7) & (15.2; 5,7)
November 26 (15.1; 9,11,13) & (15.2; 8,9,10)
December 1 (15.1; 15,17,21) & (15.2; 13,14,15,16)
December 3 (15.1; 2,4,6,8) & (15.2; 17a,18a,19a,20a)
December 5 (study for Final Examination)
December 8 (study for Final Examination)
December 10 (study for Final Examination)
December 19 (Final Examination, 9:45–11:45 (section 001) or 12:00–2:00 (section 002) in regular classroom)