

Applied Calculus II
math 130, Spring Term 2016

Class: 1:50-3:00, MWF in Briggs 423

Instructor: Alan Parks, Briggs 409, x6738, parksa@lawrence.edu

Text: Parks, *Introduction to Applied Mathematics*, edition 3A, 2015.

date	text	topic
M 3/28	7.1	Antiderivatives: power rule, exponentials, linearity
W 3/30	7.1,2	Linear inside, examples, the definite integral
F 4/1	7.2,3	Properties of the definite integral, Riemann sums
M 4/4	7.3, 8.1	Numerical integration, Fundamental Theorem of Calculus, anti-rates
W 4/6	8.2	Area
F 4/8	8.3	Probability integrals
M 4/11	8.4	Quantities in economics
W 4/13	9.1	Matrix arithmetic
F 4/15	9.1	Matrix multiplication, matrix algebra
M 4/18	9.2	Spreadsheet matrix algebra, linear recursion
W 4/20		Exam 1
F 4/22	9.2	Applications of matrix algebra
M 4/25	10.1	Linear equations and solutions, eliminating a variable
W 4/27	10.1	The Elimination Algorithm and its artifacts
F 4/29	10.1,2	Spreadsheet elimination, theory of the matrix inverse
M 5/2	10.3	Applications of linear equations
W 5/4	10.3	More applications
M 5/9	11.1	Partial derivatives
W 5/11	11.1,2	Differentiation rules, partial differential equation models and solutions
F 5/13	11.3	The Chain Rule
M 5/16	12.1	Non-linear optimization: terminology and examples
W 5/18		Exam 2
F 5/20	12.2	Lagrange multipliers for equation constraints
M 5/23	12.2	Inequality constraints, spreadsheet problems
W 5/25	12.3	Square norm, squares error, least squares
F 5/27	12.3	Regression examples, spreadsheet regression
W 6/1		Project for the final exam
F 6/3		Review
M 6/6		Final Exam (3:00-5:30)

Expectations

My main goal is for you to make steady progress in the course. Class meetings, the text, homework, exams, and my availability outside of class are coordinated to that end. Therefore, I expect you to attend class, taking careful notes, complete assignments on time, and to see me whenever you have a question. To a point, an assignment may be handed in late provided you contact me before the work is due.

As in math 120, there will be several assignments done in Excel. If you use Office360, you will need to download Excel, rather than use the on-line version, so that you have access to the software tools we will use in the course.

Grades

A starting point for calculating your grade will be to count the in-term exams 20% each, homework 20%, the final 30%, with 10% for class work.

Honor Code

The Honor Pledge applies to all assignments and exams. Please abide by any collaboration or sourcing rules that are given on assignments. If you are unclear what you are allowed, please ask.