

COURSE OUTLINE – subject to minor changes :

Part I	L-1	Mon 10 Jan	Introduction to Computer Algebra	<i>First Steps with Maple</i>
	L-2	Wed 12 Jan	Getting Started and Getting Help	
	L-3	Fri 14 Jan	Exact and Floating-Point Numbers	
		Mon 17 Jan	Martin Luther King, Jr., Day – no classes	
	L-4	Wed 19 Jan	Algebraic and Complex Numbers	
	L-5	Fri 21 Jan	Assignment and Unassignment	
	L-6	Mon 24 Jan	Evaluation and Names of Variables	
	L-7	Wed 26 Jan	Types, Attributes, and Properties	
	L-8	Fri 28 Jan	Input/Output Formats and Files	
	L-9	Mon 31 Jan	I/O of Data and Code Generation	
Part II	L-10	Wed 2 Feb	Univariate and Multivariate Polynomials	<i>Polynomials and Rational Expressions</i>
	L-11	Fri 4 Feb	Rational Functions and Conversions	
	L-12	Mon 6 Feb	Representation of Expressions	
	L-13	Wed 9 Feb	Substitution, Expansion, and Factorization	
			Project One due Friday 11 February at 10AM	
	L-14	Fri 11 Feb	Normalizing, Collecting, and Sorting	
R-1	Mon 14 Feb	Review of the first 14 lectures		
E-1	Wed 16 Feb	First Midterm covers lectures 1 to 14		
Part III	L-15	Fri 18 Feb	Defining Mathematical Functions	<i>Calculus</i>
	L-16	Mon 21 Feb	Maple Procedures and Recursion	
	L-17	Wed 23 Feb	Working with Functions	
	L-18	Fri 25 Feb	Symbolic and Automatic Differentiation	
	L-19	Mon 28 Feb	Integration and Summation	
	L-20	Wed 2 Mar	Series, Approximations, and Limits	
Part IV	L-21	Fri 4 Mar	Sequence, Set, and List	<i>Advanced Maple</i>
	L-22	Mon 7 Mar	Array, Table, and Conversions	
	L-23	Wed 9 Mar	Assume and Simplification	
	L-24	Fri 11 Mar	Two-dimensional Plots	
	L-25	Mon 14 Mar	Three-dimensional Plots	
	L-26	Wed 16 Mar	Solving Equations	
	L-27	Fri 18 Mar	Differential Equations	
			Project Two due Monday 28 March at 10AM	
L-28	Mon 28 Mar	Linear Algebra		
R-2	Wed 30 Mar	Review of the lectures 15 to 28		
E-2	Fri 1 Apr	Second Midterm covers lectures 15 to 28		
Part V	M-1	Mon 4 Apr	Introduction to MATLAB	<i>Introduction to MATLAB and Sage</i>
	M-2	Wed 6 Apr	Plotting with MATLAB	
	M-3	Fri 8 Apr	Polynomials and Fitting	
	M-4	Mon 11 Apr	Programming in MATLAB	
	M-5	Wed 13 Apr	MATLAB as Drawing Tool	
	M-6	Fri 15 Apr	Images and Movies in MATLAB	
	S-1	Mon 18 Apr	Introduction to Sage, notebook interface	
	S-2	Wed 20 Apr	Basic mathematics and plots in Sage	
	S-3	Fri 22 Apr	organization of Sage, Python scripting	
R-3	Mon 25 Apr	Review of Maple, material covered in 1st Midterm		
		Project Three due Wednesday 27 April at 10AM		
R-4	Wed 27 Apr	Review of Maple, material covered in 2nd Midterm		
R-5	Fri 29 Apr	Review of MATLAB and Sage		

Thursday 5 May, 10:30AM - 12:30PM : Final exam, room to be announced.