TIME TABLE: 24851 MWF 11:00 – 11:50 in computer lab 1200 SE0.

PREREQUISITES: Grade of C or better in MATH 210; and MCS 260 or CS 102 or CS 108.

INSTRUCTOR: Roy Lowman, Office: 626 SEO, Phone: 312 413-3735.
   E-mail: rmlowman@math.uic.edu. URL: `http://www.math.uic.edu/~rmlowman`.
   OFFICE HOURS: On Mon and Wed at 1:00pm in LH 312 and again Mon and Wed 3:00-3:50 in office SEO 626

TEXT BOOK: Prof. Verschelde's lecture notes, the "web-book", will be used as base textbook. These notes are available at `http://www.math.uic.edu/~jan/mcs320/`. The notes are based in part on the book of Andre Heck: "Introduction to Maple", 3rd Edition, Springer-Verlag, 2003.

Maple: You can buy Maple software for $25.00 at the UIC webstore. It is required that you have access to the Maple software.

MCS 320 SITE: At `http://www.math.uic.edu/~rmlowman/mcs320/` is the home site the course.

HOMEWORK: By default, one lecture from the "web-book" is required reading and study for each lecture day in this semester. Exercises are assigned with each lecture, it is strongly recommended that you try all assignments.

QUIZZES: There will be a quiz every Friday, except during exam weeks. Every quiz is worth 10 points. There will be no makeup quizzes. If you miss a quiz or if your performance is bad, it might be possible to arrange an extra project to regain some of the points lost.

PROJECTS: Three projects will be assigned during the semester, worth jointly a total of 200 points. The deadline for each project occurs at 10AM, before the lecture starts. Late submissions are accepted till 5PM the same day, but are penalized with 10 points off. Note that late correct projects may thus then still be worth more than incorrect but timely submitted projects.

ACADEMIC HONESTY: No student shall claim or submit the work of another as ones own. You may discuss homework and projects with others, but must finish it and write the solution yourself without looking at others' work. Allowing someone to copy from you is also punishable. If you ever want a good job, note that the May/June 2003 issue of the UIC alumni magazine listed Honesty/Integrity at the 2nd place in the "Top 20 Qualities/Skills Employers Seek".

EXAMS: During the semester, there will be two exams worth 100 points each. There will be no makeup exams given. The final exam counts for 200 points. If an exam is missed, then greater weight will be placed on the final exam, especially on the material covered on the missing exam.

GRADING SCALE: $90–100\% = A, 80–89\% = B, 70–79\% = C, 60–69\% = D, 0–59\% = F$. Your course grade is based on a grand total of 700 points: 100 from the quizzes, 200 from the projects, 200 from the exams during the semester, and 200 from the final exam.

CLASS ATTENDANCE: Students are expected to attend all class meetings. Any changes in this syllabus or in the scheduling of exams and other assignments will be announced during class meetings. We will also address the topics you need to implement the projects. You are expected to follow UIC's PC LAB Usage Policy, see http://www.uic.edu/depts/accc/policies/pcpolicy.html.

STUDENTS WITH DISABILITIES who require accommodations for access and participation in this course must be registered with the Office of Disability Services (ODS). Please contact ODS at 312/413- 2103 (voice) or 312/413-0123 (TTY).

SOME IMPORTANT DATES: Monday 21 January : Martin Luther King, Jr., Day. No classes.
   Friday 25 January : last day to register, last day to withdraw without W grade
   Wednesday 20 February : exam 1
   Friday 22 March : last day for optional late drop
   Monday 25 – Friday 29 March : Spring Vacation. No classes.
   Friday 5 April : exam 2
   Thursday 9 May, 10:30AM - 12:30PM : final exam, room to be announced.

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COURSE OUTLINE - subject to minor chamges:

Part I	L-1	Mon 14 Jan	Introduction to Computer Algebra	*First*
	L-2	Wed 16 Jan	Getting Started and Getting Help	*Steps*
	L-3	Fri 18 Jan	Exact and Floating-Point Numbers	*with*
		Mon 21 Jan	Martin Luther Ling, Jr., Day - no classes	*Maple*
	L-4	Wed 23 Jan	Algebraic and Complex Numbers	
	L-5	Fri 25 Jan	Assignment and Unassignment	
	L-6	Mon 28 Jan	Evaluation and Names of Variables	
	L-7	Wed 30 Jan	Types, Attributes, and Properties	
	L-8	Fri 01 Feb	Input/Output Formats and Files	
	L-9	Mon 04 Feb	I/O of Data and Code Generation	
Part II	L-10	Wed 06 Feb	Univariate and Multivariate Polynomials	*Polynomials*
	L-11	Fri 08 Feb	Rational Functions and Conversions	*and*
	L-12	Mon 11 Feb	Representation of Expressions	*Rational*
	L-13	Wed 13 Feb	Substitution, Expansion, and Factoriztion	*Expressions*
			Project One due Friday 11 February at 10AM	
	L-14	Fri 15 Feb	Normalizing, Collecting, and Sorting	
R-1		Mon 18 Feb	Review of the first 14 lectures	
E-1		Wed 20 Feb	First Midterm covers lectures 1 to 14	
Part III	L-15	Fri 22 Feb	Definining Mathematical Functions	*Calculus*
	L-16	Mon 25 Feb	Maple Procedures and Recursion	
	L-17	Wed 27 Feb	Working with Functions	
	L-18	Fri 01 Mar	Symbolic and Automatic Differentiation	
	L-19	Mon 04 Mar	Integration and Summation	
	L-20	Wed 06 Mar	Series, Approximations, and Limits	
Part IV	L-21	Fri 08 Mar	Sequence, Set, and List	*Advanced*
	L-22	Mon 11 Mar	Array, Table, and Conversions	*Maple*
	L-23	Wed 13 Mar	Assume and Simplifications	
	L-24	Fri 15 Mar	Two-dimensional Plots	
	L-25	Mon 18 Mar	Three-Dimensional Plots	
	L-26	Wed 20 Mar	Solving Equations	
	L-27	Fri 22 Mar	Differential Equations	
			25-29 Mar Spring Break	
			Project Two due Monday 01 Apr at 10AM	
	L-28	Mon 01 Apr	Linear Algebra	
R-2		Wed 03 Apr	Review of the first 14 lectures	
E-2		Fri 05 Apr	First Midterm covers lectures 1 to 14	
Part V	M-1	Mon 08 Apr	Introduction to MATLAB	*Introduction*
	M-2	Wed 10 Apr	Plotting with MATLAB	*to*
	M-3	Fri 12 Apr	Polynomials and Fitting	*MATLAB*
	M-4	Mon 15 Apr	Programming in MATLAB	*and*
	M-5	Wed 17 Apr	MATLAB as Drawing Tool	*Sage*
	M-6	Fri 19 Apr	Images and Movies in MATLAB	
	S-1	Mon 22 Apr	Introduction to Sage, notebook interface	
	S-2	Wed 24 Apr	Basic mathematics and plots in Sage	
	S-3	Fri 26 Apr	Organization of Sage, Python scriptiong	
R-3		Mon 29 Apr	Review of Maple, material covered in 1st Midterm	
			Project One due Wednesay 01 May at 10AM	
R-4		Wed 01 May	Review of Maple, material covered in 2st Midterm	
R-5		Fri 03 May	Review of Matlab and Sage	

Thursday 9 May, 10:30AM - 12:30PM : Final exam, room to be announced.

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