

TIME TABLE: 66646 MWF 2:00 – 2:50 from 01/12/2004 to 04/30/2004 in computer lab CCC 408 (fourth floor of Chicago Circle Center), except for five times: Wed 28 Jan, Wed 4 Feb, Wed 11 Feb, Wed 18 Feb, Wed 25 Feb. At these five times we will either meet in another lab or in SH 0220.

PREREQUISITES: Grade of C or better in MATH 210; and MCS 260 or EECS 170 or EECS 171.

INSTRUCTOR: Jan Verschelde, Office: 728 SEO, Phone: 312 996 4609.

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OFFICE HOURS: At 3PM on Monday, 11AM on Wednesday, and 1PM on Friday, I am sure to be in my office; but feel free to stop by if you have any math questions. We can also make an appointment.

TEXT BOOK: Lecture notes will be distributed at the beginning of each lecture and will also be made available via the course web site. The notes are based in part on the book of André Heck: “Introduction to Maple”, 3rd Edition, Springer-Verlag, 2003, available at UIC’s bookstore.

MCS 320 SITE: At <http://www.math.uic.edu/~jan/mcs320/index.html> is an electronic version of this sheet, along with lecture notes, Maple worksheets, computer assignments, and other relevant materials.

HOMEWORK: Exercises are assigned with each lecture. Although only a selection of the homework can be collected to make up for quizzes, it is strongly recommended to 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, you can turn in the assigned homework 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 2PM, 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 programs.

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% = E.

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/acc/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 19 January: Martin Luther King Day, no class.

Friday 23 January: last day to drop the class.

Friday 20 February: last day to withdraw from the course.

Monday 22 – Friday 26 March: Spring break.

First week of May: final examination.

COURSE OUTLINE – subject to minor changes :

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

first week of May: **Final Exam** – date, time, and room to be announced.