

**TIME TABLE:** 24851 MWF 10:00 – 10:50 from 01/16/2007 to 05/04/2007 in computer lab SEL 2249.

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

**INSTRUCTOR:** Jan Verschelde, Office: 1210 SEO, Phone: 312 996 4609.

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**OFFICE HOURS:** At 11AM on Monday, at noon on Wednesday, and at 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 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% = 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:**

Friday 26 January : last day to complete registration, add, or drop the class.

Friday 23 February : last day to withdraw with college permission.

Monday 26 – Friday 30 March : Spring Vacation. No Classes.

Monday 7 – Friday 11 May : Final exam.

**COURSE OUTLINE** – subject to minor changes :

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

**Mon 7 - Fri 11 May: Final exam: date, time, and room to be announced.**