

**TIME TABLE:** 20688 MWF 2:00 – 2:50 from 08/22/2005 to 12/02/2005 in computer labs SES 205B&C (Science Learning Center, Science and Engineering South).

**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 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 2 September : last day to add or drop the class.

Monday 5 September : Labor Day Holiday, no class.

Friday 30 September : last day to withdraw with college permission.

24–25 November : Thanksgiving Holiday.

Tuesday 6 December, 1:00–3:00PM : Final exam.

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

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

**Tuesday 6 December, 1:00–3:00PM: Final exam, room to be announced.**