Professor: Eyal Markman
Office: LGRT 1223G
Office Phone: 545-2788
E-mail: markman@math.umass.edu
Office hours: Wednesday 3:00 → 4:00 pm, Friday, 2:00 → 3:00 pm, and by appointment.
Office hours are held in 1223G LGRT.
Course Web page: http://www.math.umass.edu/~markman/ Please check it often!


Prerequisites: Math 233.

Homework: Will be assigned weekly and will be due each Friday, unless mentioned otherwise. The homework will be graded by a special grader. Due to lack of funds, it will not be possible to grade all the homework problems assigned. A few of the homework problems will be corrected and graded every week. Nevertheless, for your own benefit, you will be asked to hand in all the homework problems assigned. Your grade on each homework assignment will be calculated as follows:

70% The grade on the corrected problems.

30% Credit for handing in most of the homework problems assigned. Partial credit will be given.

Late homework will not be collected. Instead, your three lowest grades will be dropped.

Grades:
- Homework - 20%
- Two Midterms - 50% (each 25%)
- Final Exam - 30%

First Midterm: Tuesday, October 14, 6:00 - 7:30 PM.
Second Midterm: Wednesday, November 19, 6:00 - 7:30 PM.
Final: Monday, December 8, 1:00 - 3:00 PM, Room: LGRT 121. Make-ups will not be given to accommodate travel plans.

Calculators Policy: Calculators will not be allowed in the exams. Calculators and computers may be used to check answers on the homework assignments. Nevertheless, an unsubstantiated answer will not receive credit.

See back . . .
Homework Assignment 1 (Due Friday, September 12)

Section 2 page 5: 4
Section 3 page 8: 1 (a), (b)
Section 4 page 12: 4, 5 (a), (c), 6
Section 5 page 14: 1 (c), (d), 9, and the extra problem:
Use established properties of moduli to show that when $|z_3| \neq |z_4|$, then

$$\frac{|z_1 + z_2|}{|z_3 + z_4|} \leq \frac{|z_1| + |z_2|}{||z_3| - |z_4||}$$

Section 7 page 22: 1 (a), 2, 3, 4, 5 (c)
Check our website for possible additional problems.

Syllabus:

1) Complex Numbers: algebraic and geometric properties, polar form, powers and roots.
3) Elementary functions of a complex variable: exponential and trigonometric functions, logarithms.
4) Path integrals: contour integration and Cauchy’s integral formula; Liouville’s theorem, Maximum modulus theorem, the Fundamental Theorem of Algebra.
5) Series: Taylor and Laurent expansions, convergence, term-by-term operations with infinite series.
6) Isolated singularities and residues. Essential singularities and poles.
7) Evaluation of Improper integrals via residues.
If time permits:
8) Mappings by elementary functions and linear fractional transformations; conformal mappings.