

## MATH 372 – Complex Analysis - Spring 2009

**Your Prof:** James D. Harper, Ph.D.

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### Office Hours

Monday, Wednesday 10:00 to 11:00

Friday 1:00 to 2:00

And by appointment.

**Text** Schaum's Outlines *Complex Variables*, 1<sup>st</sup> edition.

**Syllabus** Selections from chapters 1 through 8.

**Equipment** A ruler. Bring it to class everyday.

### Grading System

**Homework** 30%

Homework will be assigned in two categories: "Turn In" and "Self – Study". Turn in homework will be collected once each week, usually on Wednesdays. Your work will be read and commented on. Late homework is discouraged, but will be accepted on rare occasions.

**Exams** 50%

There will be two in-class exams for your pleasure and enjoyment. Dates will be announced.

**Final Exam** 20%

This will be a take-home exam due Tuesday, June 9.

### Grading Scale

In a small upper division class it does not make sense to have a percentage based grade scale. Your grade will be based on your knowledge and mastery of the material and your overall performance. Some class participation maybe required.

### Important Dates

Memorial Day Holiday

Monday, May 25

### **Course Objectives and Learner Outcomes**

Students will be expected to do the following.

- Perform complex number arithmetic in rectangular and polar forms.
- Differentiate the elementary functions
- Compute line integrals
- Compute real integrals using residues and Cauchy's Theorem.
- Compute the Taylor series for a holomorphic function and the radius of convergence of a power series.
- Determine where a region is mapped to under a linear fractional transformation. Conversely, students will be able to define a linear fractional transformation that maps one region to another region.
- Prove a given function is holomorphic using the Cauchy-Riemann equations.

### **Corresponding with Dr. Harper**

It is easier for me to respond to e-mail than to a voice-mail message, especially if you have a technical question or, even, if you just want to set-up an appointment. Generally speaking, the latest I check my e-mail is about 2:00 in the afternoon. (I do *not* have home e-mail service.) Therefore, messages sent after two o'clock will not be read until the next day.