

MATH 463, Sec. 0101: Complex Variables for Scientists and Engineers

Department of Mathematics, UMCP

Handout 1: COURSE SYLLABUS AND POLICIES

Spring 2011

Date: Tuesday, 01/25/11

Lecture Room: MATH0307

Time: TuTh 9:30am– 10:45am

Instructor: Prof. Dionisios Margetis; e-mail: dio@math.umd.edu

Office: MATH 2110; phone: 5-5455.

Office hours: Tuesdays 10:50am-12:15pm (after class); or by appointment. Since I am occasionally called away for research or departmental matters, it is advisable to check with me as to whether I will be in my office at the indicated hours. Students coming to office hours should have *specific and well defined* questions.

Prerequisites: MATH 241, or permission of the instructor.

Required text: E. B. Saff & A. D. Snider, *Fundamentals of Complex Analysis with Applications to Engineering and Science*, Prentice Hall, 2002; ISBN 978-0139078743.

Course outline: Concepts and techniques for complex numbers and variables aiming to advanced undergraduate and starting graduate students in engineering, physics and mathematics.

Topics: The algebra of complex numbers (1 week). Analytic functions: continuity, differentiability, Cauchy-Riemann equations, harmonic functions (2.5 weeks). Contour integrals: Estimates; Cauchy-Goursat theorem; Cauchy Integral formulas; Liouville Theorem; fundamental theorem of algebra; maximum modulus theorem (3.5 weeks). Elementary functions and introduction to Riemann surface (1 week). Infinite series and convergence (1 week). Singularities, calculus of residues, evaluation of real integrals (2 weeks). Conformal mapping and applications (1 week). Fourier series and integral transforms with applications (1 week).

A detailed syllabus is given on the Mathematics Department web page:

<http://www.math.umd.edu/undergraduate/courses/syllabi/syllabusMATH463.html>

This syllabus corresponds to nearly half the material in the above textbook.

Course Web page (evolving): <http://www.math.umd.edu/~dio/courses/MATH463/>

Homeworks as well as any updates on the course material will be **posted on this website** as promptly as possible.

Teaching Assistant/Grader: Mr. Bradford A. Sanders; brad@math.umd.edu

Timing of Exams: There will be three in-class exams and one final exam. Dates for in-class exams are: Tue March 8, Thu April 7, Tue May 3. The exam with the lowest score is dropped: only **two** of these in-class exams will count towards your final grade. The Final Exam is scheduled for **Friday May 13, 8:00am-10:00am**; the room will be announced. I **strongly** advise you to take all these exams. (For **grading scheme**, see next page.)

Timing of Quizzes: Two 10-minute quizzes (1-2 problems each) will be given in class on the following dates: Thu Feb. 10, Tue March 15. The quizzes and other in-class exams will be based on previously assigned homeworks. (For grading, see next page.)

Homeworks: There will be 6 sets of required homeworks, due nearly every 2 weeks. Some (but not all) of the problems will be directly from the text. Once assigned, each homework

must be turned in by the date specified. **Late homeworks will not be accepted.** The requirements of legibility and clarity for tests apply even more strongly to homework sets. You are encouraged *but not required* to prepare your homework sets by using a word processor. Illegible problems will not be graded.

Grading scheme: 40% from 2 in-class exams (of equal weight, 20% each); 10% from 2 quizzes (of equal weight, 5% each); 25% from homeworks; and 25% from the final exam.

Exams policy: No calculators are allowed during exams and quizzes. No notes or textbook will be allowed during exams or quizzes. Explanations in your test papers must be given in coherent English sentences. Minor algebraic and numerical errors, such as missing a sign, that are not symptomatic of a conceptual misunderstanding will be penalized minimally. Egregious errors, such as $\frac{1}{a+b} = \frac{1}{a} + \frac{1}{b}$, will be penalized severely.

If you feel that you are entitled to more points on a test or homework, you may **resubmit your paper** with a note explaining why you feel your grade should be changed. (Since each questioned problem will be very carefully reexamined, it is possible that you could actually end up losing points in the reevaluation process.) The Instructor and grader reserve the right to *disregard your paper resubmission if they deem this is overdue or unsubstantiated.*

Make-up exams: *In principle, there will be no make up exams:* if you are absent from any test and you provide *well in advance* a *documented, valid* justification for the reason of your absence, you may have the chance to make up via the final exam. (As stated in the above, only 2 of the 3 in-class exam will count towards the final grade.)

Academic Integrity. You are expected to read carefully and adhere to the following instruction provided by the Student Honor Council.

The University of Maryland, College Park has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards for this course. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information on the Code of Academic Integrity or the Student Honor Council, please visit <http://www.shc.umd.edu>

To further exhibit your commitment to academic integrity, remember to sign the Honor Pledge on all examinations and assignments: *“I pledge on my honor that I have not given or received any unauthorized assistance on this examination (assignment).”*

Additional note for MATH 463: You will not be asked to sign such a pledge on possible homework assignments, but you are nevertheless expected to adhere to the principles of the pledge. The rationale for the pledge is available online at

<http://www.umd.edu/honorpledge>

Students With Disabilities. If you have a documented disability and need academic accommodations, please *contact me as soon as possible.* **DSS Procedures:** I ask that, within the 2nd week of classes, you *submit 4 Test Authorization Forms* (by DSS), one for each exam (3 in-class exams + Final).

Religious Observances. If you plan to be absent from class because of religious observances, please submit a list of the dates of your absences within the first week of classes.