Math 543 - Fall 2016
Course Page

Lecturer: Dror Varolin

Best way to reach Dror ⇒

<table>
<thead>
<tr>
<th>Office</th>
<th>4-111 Math Tower</th>
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<tbody>
<tr>
<td>Office Hrs</td>
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General Information: This is an advanced course in complex analysis, focusing precisely on complex analysis and geometry of Riemann surfaces. Much of the course describes the machinery needed to carry out modern techniques of complex analysis on Riemann surfaces. The most novel part of the course comes towards the end, where Hörmander’s Theorem on $L^2$ estimates for solutions of the inhomogeneous Cauchy-Riemann Equations are established and used to prove a few interesting results.

In addition to establishing a number of important basic properties of Riemann surfaces, this course provides good preparation for a course in several complex variables, particularly for the type of Complex Geometry / Partial Differential Equations approach developed by a great many excellent researchers, two of the most celebrated being Jean-Pierre Demailly and Yum-Tong Siu. (Such a course will be given by me next semester.)

General Plan: After a very rapid review of certain aspects of basic complex analysis, we will try to cover chapters 2-12 in the notes. I will be away for 4 or 5 days during the semester, but we will either have a substitute or else make-up classes. The course will move fairly quickly, so students who want to master the material might like to have a relatively quick read before the lecture, and a serious review after the lecture.

Text: Riemann Surfaces by Dror Varolin
(This is my own set of notes, and will be provided to students in the class.)

Course webpage: http://www.math.stonybrook.edu/~dror/543-f16.html

Homework: There is no required homework for this course. There are, however, many exercises in the notes, and students are encouraged to do them, and to discuss them with the professor.

Examinations: There will be no formal exams. However, each student registered in the class will give a lecture on one topic of the student’s choice, with the agreement of the professor. A number of options for such topics will be provided, though students are invited to propose any topic they find interesting. These lectures will take place in the evening on days to be agreed upon.

Disabilities: If you have any condition, such as physical or mental disability, that would make it difficult to complete the course or that will require extra time for examinations, please notify your instructor as soon as possible, so that the appropriate arrangements could be made.