

Dror Bar-Natan: Classes: 2003-04: Math 1350F - Knot Theory:

## Homework Assignment 3

Assigned Thursday September 25; due Thursday October 2 in class.

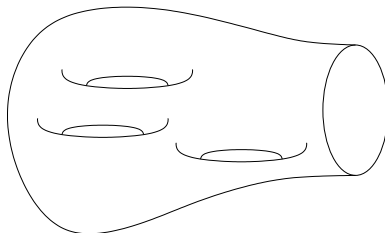
**Overall grading policy.** %70 final exam, %30 HW, though good deeds may earn you some advance credit of between 0 and 100 points total, lowering the combined weight of the final and the HW assignments. Good deeds may include but are not limited to: taking superb notes, drawing nice pictures, solving problems and resolving difficulties, presenting background/extra material, etc.

**Required email.** The class photo will be on the class' web site in a day or two and you are required to find it, find yourself in the photo, and send me an email message (either using the feedback form on the class' web site or using my regular email address) with the following information:

- Where are you in the picture? (1-12 from the left).
- Your name.
- Your email address.
- Your telephone number(s).
- A word about yourself: Are you a graduate student? An undergrad? What are you interested in? What is your background?
- What of the above information do you allow me to put on the class' web site to share with the other students (and unfortunately, the rest of the world as well)? My default will be to assume that only your phone number and your description of yourself are to be kept private.

Your email is due like the rest of this assignment, on Thursday October 2 by class time. If you aren't in the picture at all, talk to me after class and I'll take a (small) picture of you on the spot and edit it into the main picture.

**To be handed in.** Without using the classification theorem for surfaces, show in a geometric way that every Seifert surface coming from the Seifert algorithm is a once-punctured  $g$ -holed torus:



$$g = 3$$

**Idea for a good deed.** Find and tell the rest of us all about Schönflies' theorem.