

18.784, Spring 2008 Final Project Guidelines

Instead of a final exam for this course, we have a final project. According to the guidelines for seminar courses in mathematics, the paper should be at least 10 pages in length and should have the opportunity to be revised.

At the same time, I'd like these projects to continue to integrate the more sophisticated topics in the course that we will cover in the remainder of the semester. I see the typical paper as consisting of the following three components, and the paper will be completed in stages (and handed in at each stage) accordingly.

- A careful summary of the topic you've chosen as covered in Berndt's book. That is, it should be an expanded written version of the sorts of oral presentations we've been doing in class. This should include your own points of emphasis and seek to do more than the textbook to explain where ideas come from and the motivation behind certain steps in the proof.
- An independent study of where the subject has gone since Ramanujan. In most cases, there will be many directions one could take here. Try to focus on a specific line of questioning and consult either more advanced textbooks or papers (especially, but certainly not limited to, the references in Berndt). In particular, try to incorporate our forthcoming discussions of modular forms to give a broader perspective on the identities you present in part 1. (This won't necessarily be possible in all cases, and you shouldn't worry if your initial questions don't ultimately lead in this direction.)
- Your own attempts to do independent research in the area you've described above. This need not result in new and publishable work (though I believe there are many unsolved but potentially solvable questions lurking in Berndt), but you should at least document your attempts to solve the problem. Even if you run up against a brick wall in your investigations, describe the brick wall. Sometimes that can be just as instructive.

FOR NEXT FRIDAY, MARCH 21:

Write down, in a few typed paragraphs (or even 1 or 2 pages) what questions you intend to explore for your final project. Any project related to q -series that we've discussed so far is fair game. Try to be as specific as possible. Also, if you feel unfamiliar with TeX, please note that in your proposal. We'll plan to have one or two seminars on TeX outside of class following spring break.