PROJECT GUIDELINES

MATH 343, SPRING 2013

1. OVERVIEW AND DEADLINES

As agreed in the first week, you have a choice between a final exam and a final project. The exam will be 3 hours in the assigned exam slot; it will be similar in structure to the midterm, scaled up for the longer time but not quite as difficult. The project will be a written project around 6-10 pages in length; there is no strict maximum or minimum.

You must choose whether to take the exam or do the project by **Monday, March 11**. If you opt for the project you must choose your topic by **Monday, March 18**. The project is due **Thursday, April 11**.

2. CONTENT AND TOPIC IDEAS

Here are a few ideas to get everyone started thinking about project topics.

- Find an interesting combinatorial class (or family of combinatorial classes), explain it and analyse it.
- Expand on a concept mentioned briefly in class, eg other constructions, labelled counting, ranking and unranking of permuations (including minimal change), or of integer partitions (see Kreher and Stinson for those ones).
- Anything from chapter 5 and onwards in Kreher and Stinson.
- Implement things we have discussed, eg we know how much of combstruct works under the hood, implement some interesting parts in a language of your choice; implement some random generators along with some tools to visualize the output, do an analysis of typical features.
- Read a relevant research paper, explain the core idea and work out a detailed, insightful example.

3. EVALUATION

The project should be written at a level that your fellow classmates could understand and appreciate it. No handwritten projects please.

The project will be graded on

- clarity, presentation, and language: Is the project clearly written and understandable? Does it tell a story in a compelling way?
- mathematical content and correctness: Is the mathematics in the project correct? Is it relevant to class and to the project topic? Is the mathematics insightful and substantial?

There are many ways to write a good project, so there can be no rigid grading scheme.

Cite your sources and **don't copy**. You can get a 0 or worse for academic dishonesty.