LOGISTICS

Instructor: Jonathan Bloom
Email: bloomjs@lafayette.edu
Office: 221 Pardee
Office Hours: MW: 2 – 4, F: 1 – 2, or by appointment
Class Schedule: MW: 12:45 – 2 (Pardee 112)
Recommended Book: *Combinatorics: A guided tour* by David R. Mazur
Course Website: webbox.lafayette.edu/~bloomjs/325

GRADING

The course grade will be distributed as follows:

- **Homework:** 30%
- **Midterm #1:** 25%
- **Midterm #2:** 25%
- **Final Exam:** 20%

HOMEWORK

In general, homework will be assigned each week and will be due the following Wednesday in class. Although late homework will not be accepted, you may miss up to one homework without affecting your homework grade, i.e., the lowest homework grade will automatically be dropped.

For each assignment, I will grade one (or possibly two) problems. *For full credit a complete and thorough explanation of your answer is required. In particular, no credit will be earned for answers that consist of only a number or a string of algebraic calculations without words that support these calculations.*

It is paramount that you work through the homework and seek help when you have questions. *You are also encouraged to work with others but your final write-up must be your own words; this includes not copying solutions that you may find on the internet!*

MIDTERM & FINAL

Our schedule of exams is as follows:

- **Midterm #1** Wednesday, September 27th
- **Midterm #2** Wednesday, November 8th
- **Final** TBA
Our two midterm exams will be held in the **evening** from 6pm-9pm on the Wednesdays indicated. This is to remove the time-pressure component of examination. These exams will be held in **Pardee 217**.

The schedule and location for our final exam is TBA by the registrar.

**SPECIAL NEEDS**

If as a student you have any specific learning needs that require special arrangements (e.g., more time to complete an exam or a distraction free setting), you must discuss those needs with me during the first week of the semester. To be eligible for special arrangements, you must provide me with the appropriate form from ATTIC.

**COURSE OBJECTIVES**

1. Expose students to combinatorial ideas and problems
2. Teach students how to use basic concepts like the pigeonhole principle, permutations, and combinations, and inclusion-exclusion to solve problems
3. Introduce students to the idea of generating functions
4. Introduce students to graph theory
5. Introduce students to modern research in combinatorics

**LEARNING OUTCOMES**

1. Be able to solve basic counting problems using myriad combinatorial techniques and methods.
2. Have a deeper understanding of binomial coefficients and their application to various mathematical problems.
3. Understand the basics of generating functions and be able to use them to solve more advanced counting problems.
4. Be able to use graph theoretic models to solve certain combinatorial problems.
5. Have an improved ability to read and write mathematical proofs - especially combinatorial ones.

**ACADEMIC INTEGRITY**

All materials turned in to the instructor must be the work **solely** of the individual student. In particular, any collaboration or behavior arousing the instructor’s reasonable suspicion of academic dishonesty will be referred to the Dean of Studies for appropriate disciplinary actions (see Student Handbook).

*The student work in this course is in full compliance with the federal definition of a four credit hour course. Please see the Lafayette College Compliance webpage (http://registrar.lafayette.edu/files/2012/07/Federal-Credit-Hour-Policy-Web-Statement.doc) for the full policy and practice statement.*