

SCI 199Y: Random Walks and Mathematical Discovery

(1996–97)

Lectures: Wednesdays, 2:00 to 4:00 pm
Sidney Smith Hall, room 539 (basement).

Instructor: Jeffrey Rosenthal
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(Office Hours to be arranged.)

Marking scheme:	Class Participation	40%
	Minor Paper (December)	20%
	Major Paper (March)	40%

OUTLINE:

This course will attempt to combine two themes:

- 1. Random walks.** The simplest random walk involves repeatedly making \$1 bets, and asking such questions as: Will you eventually go broke? What is the probability that you will get rich first? What is the probability that you can keep playing forever? It also considers philosophical questions such as, what is the difference between “having probability 0” and “impossible”?
- 2. Mathematical discovery.** How is mathematics best taught? Are alternative teaching methods better than standard lectures? How do people learn mathematics? Why do some learn quicker than others? What is “math anxiety”? Do issues of gender and race come into play? How do mathematical geniuses think about mathematics?

Notes:

1. To obtain class participation points, students are expected to enthusiastically participate in discussions and activities in class time, and to conscientiously keep up with reading and other (minor) weekly assignments.
2. The Minor Paper will be 5–10 pages (typed double spaced), and the Major Paper will be about 20 pages (typed double spaced). You will have some freedom to choose your topics. Details will be discussed later.

(World Wide Web address: <http://utstat.toronto.edu/jeff/courses/sci199.html>)