

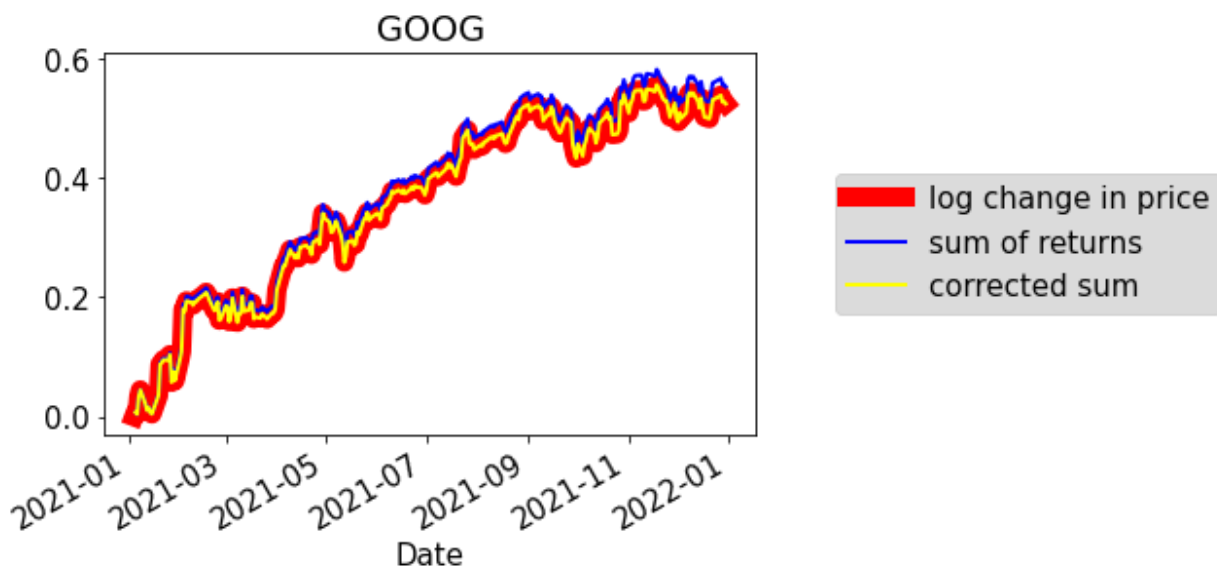


# IE 525A SPRING 2023

## IE 525 (Stochastic Calculus)

Section A

CRN 54714



This syllabus governs the first half (Section A) of the course (January 17-March 10)

- **Instructor:** Richard Sowers <r-sowers@illinois.edu>
- **Home page:** <https://publish.illinois.edu/r-sowers/> (this syllabus can be found there).
- **Class meets:** 1PM – 2:40PM MW (see canvas)
- **Learning Management System:** Canvas
  
- **Texts (optional):**
  - Stochastic Differential Equations: An Introduction with Applications, Oksendal
  - Arbitrage Theory in Continuous Time, Bjork
  - Options, Futures, and Other Derivatives, Hull

Topics:

- Pairs Trading
- Gaussian random variables
- Central Limit Theorem
- Brownian Motion
- Returns and Log Returns
- Information
- Brownian Quadratic Variation
- Ito Integration
- Ito Formula

**Grading policy:** Final grades for the first half of the semester will be determined on the basis of the total numerical score (and will be curved).

Component	Weight
Hourly Exam (2023-01-30)	20% of grade
Hourly Exam (2023-03-08)	20% of grade
Quizzes, Projects, Homework	60% of grade

Logistical notes:

- We will extensively use Google Drive and Google Colab and for teaching material and submission of coding projects. To get access to these, you need to have Account Status “On” for Google Apps at <https://cloud-dashboard.illinois.edu/cbdash/> and then log in via [g.illinois.edu](https://g.illinois.edu)
- Group coding assignment should be submitted via URL to a Google Colab notebook.
- Groups will be assigned by instructor.
- All date-times will be in Champaign-Urbana
- All students are expected to abide by the Honor Code; you are here to learn (and my interest is in helping you do that).
- Disability requests should be routed through DRES <[disability@uiuc.edu](mailto:disability@uiuc.edu)>
- Students who have suppressed their directory information pursuant to the Family Educational Rights and Privacy Act (FERPA) should self-identify to the instructor
- Safety information: <http://police.illinois.edu/emergency-preparedness/run-hide-fight/resources-for-instructors/>
- The technology of the course may evolve as the semester progresses and as I learn new tools. The content and goals will stay the same.

