**Instructor:**
Vu Dinh
Email: vucdinh@udel.edu
Office: Ewing Hall 312

**Class Times:**

- Lectures: Mondays–Wednesdays, 3:35pm-4:50pm, Kirkbride Hall Room 205

- Labs:
  - Section 050L: Mondays 2:30pm - 3:20pm, Ewing Hall Room 101
  - Section 051L: Wednesdays 2:30pm - 3:20pm, Ewing Hall Room 101
- Office hours
  - Tuesdays and Thursdays 2:00pm - 3:30pm, Ewing Hall Room 312
  - or by appointments

**Course's webpage:**

https://vucdinh.github.io/m205f21

Visit this page regularly. All handouts (homework assignments, lectures) will be posted at this webpage. Canvas will be used only to access graded assignments (and is set up to prepare for the scenarios when the course have to be moved online).

**Communications:** In addition to communications via emails and appointments, a Slack workspace will be created for the class to accommodate more dynamic learning activities.

**Prerequisites:** MATH210 (Discrete Mathematics) or MATH230 (Finite Mathematics with Applications).

**The Safety of Our Learning Environment.** Student learning can only occur when students and their instructors feel safe, respected, and supported by each other. To ensure that our learning environment is as safe as possible, and in keeping with CDC guidelines to slow the transmission of COVID-19 and the University of Delaware's Return to Campus Guidelines (Health and Safety Section), we will adhere to the practice of wearing face masks and cleaning your seat and desk area at the beginning of class.

This means that you:

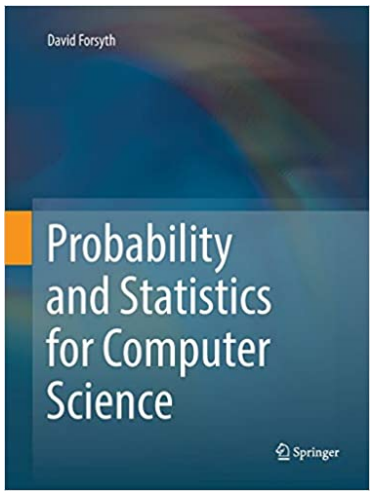
- Must wear a cloth mask that covers your nose and mouth
- Must not eat or drink in class
- Upon entering the classroom, wipe down your seat and desk area

As necessary, the University may announce modifications to these practices. In that event, these guidelines will be updated to reflect those modifications.

**References:**

**Lectures:**
*Probability and Statistics for Computer Science.*
David Forsyth (2018)
The text is available online from the UD library.

**Labs:**
$simpleR$ – Using R for Introductory Statistics
John Verzani (2002)
Link




**Topics:** The aim is to cover Chapters 1-9 of the text. Topics include descriptive statistics, graphical displays, sampling, variation, normal distribution, estimation, hypothesis testing, one-way analysis of variance, simple linear regression and goodness of fit.

**Tentative schedule:**

| Date | Theme/Topic | Labs | Assignments |
|---|---|---|---|
| **Sep 1** | Syllabus | | |
| **Sep 8** | Chapter 1: Describing dataset | Section 2: Handling data | |
| **Sep 13 - 15** | Chapter 2: Looking at Relationships | Section 3: Univariate data | |
| **Sep 20-22** | Chapter 3: Basic Ideas in Probability | Section 4: Bivariate Data | Homework 1 (due 09/22) |
| **Sep 27-29** | Chapters 3-4 | Section 4: Correlation | |
| **Oct 4-6** | Chapter 4: Random variables and expectations | Section 6: Random data | Homework 2 (due 10/06) |
| **Oct 11-13** | Chapter 5: Useful distributions | Section 7: The central limit theorem | |
| **Oct 18-20** | Chapter 6: Samples and populations | Section 9: Confidence interval estimation | Homework 3 (due 10/20) |
| **Oct 25-27** | Review and midterm exam | | Midterm: Oct 27 (lecture), Oct 25-27 (labs) |
| **Nov 1-3** | Chapter 7: The significance of evidence | Section 10: Hypothesis testing | |
| **Nov 8-10** | Goodness of Fit | Section 12: Goodness of Fit | Homework 4 (due 11/10) |
| **Nov 15-17** | Linear Regression | Section 13: Linear regression | |
| **Nov 22-24** | Thanksgiving break | | |
| **Nov 29 - Dec 1** | One-Way Analysis of Variance | Section 15: Analysis of variance | Homework 5 (due 12/01) |
| **Dec 6-8** | Selected topics + Review | | |
| **Exam week** | | | |

**Homework:** Assignments will be posted on the web every other Monday (starting from the third week) and will be due on Wednesday of *the following week*, *at the beginning of* lecture. No late homework will be accepted. Your lowest homework scores will be dropped in the calculation of your overall homework grade.

**Quizzes:** To encourage you to keep up with reading and understanding the concepts, at the end of some chapters, there will be a short quiz during class. The quiz dates will be announced at least *one* class in advance. Your lowest quiz score will be dropped.

**Exams:**

- There will be an in-class midterm exam during the week of October 25-27. The exam consists of two parts: a written exam during the Oct 27 lecture, and the computational exam during the lab sessions of that week.
- Final exam (written) during the final week.

**Evaluation:**

- Overall scores will be computed as follows:
  25% homework, 10% quizzes, 25% midterm, 40% final
- No letter grades will be given for homework, midterm, or final. Your letter grade for the course will be based on your overall score.
- The lowest homework scores and the lowest quiz score will be dropped.
- Here are the letter grades you can achieve according to your overall score.
  - $\geq 90\%$: At least A
  - $\geq 75\%$: At least B
  - $\geq 60\%$: At least C
  - $\geq 50\%$: At least D

**Data Analysis:** We will do data analysis using an open source statistical system called R

http://cran.r-project.org/

To install R:

- Windows: Go to http://cran.r-project.org/bin/windows/base/ and download using the link saying “Download R 4.x.y for Windows"
- Mac: http://cran.r-project.org/bin/macosx/R-latest.pkg
- Linux: Go to http://cran.r-project.org/bin/linux/ and download as needed.
- To program in R, you have the option to work in RStudio, an open source development environment http://www.rstudio.com/ide/download/.

**Ethics:**

- You **must** write up solutions on your own. You may **never** read or copy solutions of other students.
- You are **encouraged** to discuss with other students about the class materials and homework.

**UD Policies:**

- **Academic Integrity.** Please familiarize yourself with UD policies regarding academic dishonesty. To falsify the results of one's research, to steal the words or ideas of another, to cheat on an assignment, to re-submit the same assignment for different classes, or to allow or assist another to commit these acts corrupts the educational process. Students are expected to do their own work and neither give nor receive unauthorized assistance. Complete details of the university's academic integrity policies and procedures can be found at

  https://sites.udel.edu/studentconduct/sgup/
  Office of Student Conduct, 218 Hullihen Hall, (302) 831-2117.
  E-mail: student-conduct@udel.edu

- **Harassment and Discrimination.** The University of Delaware works to promote an academic and work environment that is free from all forms of discrimination, including harassment. As a member of the community, your rights, resource and responsibilities are reflected in the non-discrimination and sexual misconduct policies. Please familiarize yourself with these policies at

  https://www.udel.edu/oei

  You can report any concerns to the University's Office of Equity and Inclusion, at 305 Hullihen Hall, (302) 831-8063 or you can report anonymously through UD Police (302) 831-2222 or the EthicsPoint Compliance Hotline at

  https://www1.udel.edu/compliance

  You can also report any violation of UD policy on harassment, discrimination, or abuse of any person at this site:

  https://sites.udel.edu/sexualmisconduct/how-to-report/

- **Faculty Statement on Disclosures of Instances of Sexual Misconduct.** If, at any time during this course, I happen to be made aware that a student may have been the victim of sexual misconduct (including sexual harassment, sexual violence, domestic/dating violence, or stalking), I am obligated by federal law to inform the university's Title IX Coordinator. The university needs to know information about such incidents to, not only offer resources, but to ensure a safe campus environment. The Title IX Coordinator will decide if the incident should be examined further. If such a situation is disclosed to me in class, in a paper assignment, or in office hours, I promise to protect your privacy–I will not disclose the incident to anyone but the Title IX Coordinator.
  For more information on Sexual Misconduct policies, where to get help, and reporting information, please refer to

  https://www.udel.edu/sexualmisconduct

  At UD, we provide 24/7/365 crisis assistance and victim advocacy and counseling. Contact 302-831-1001 to get in touch with a sexual offense support advocate, as well as confidential and anonymous counseling services for other concerns.

- **Accommodations for Students with Disabilities.** Any student who thinks he/she may need an accommodation based on a disability should contact the Office of Disability Support Services (DSS) office as soon as possible. Students who have documentation of their need for accommodation should register via the SAM platform:

  https://andes.accessiblelearning.com/UDEL/

  Reach DSS in the following ways:

  Phone: 302-831-4643; Email: dssoffice@udel.edu
  or visit at 240 Academy Street, Alison Hall Suite 130.

  Note: During Covid-19 response call ahead to schedule an appointment to come to office.

- **Non-Discrimination.** The University of Delaware does not discriminate against any person

on the basis of race, color, national origin, sex, gender identity or expression, sexual orientation, genetic information, marital status, disability, religion, age, veteran status or any other characteristic protected by applicable law in its employment, educational programs and activities, admissions policies, and scholarship and loan programs as required by Title IX of the Educational Amendments of 1972, the Americans with Disabilities Act of 1990, Section 504 of the Rehabilitation Act of 1973, Title VII of the Civil Rights Act of 1964, and other applicable statutes and University policies. The University of Delaware also prohibits unlawful harassment including sexual harassment and sexual violence.
For inquiries or complaints related to non-discrimination policies, please contact:

Office of Equity and Inclusion
Email: oei@udel.edu; Phone: (302) 831-8063
305 Hullihen Hall Newark, DE 19716

For complaints related to Section 504 of the Rehabilitation Act of 1973 and/or the Americans with Disabilities Act, please contact:

Phone: 302-831-4643; Email: dssoffice@udel.edu
or visit at 240 Academy Street, Alison Hall Suite 130.

or contact the U.S. Department of Education - Office for Civil Rights.