# STAT 24000 Online   Summer 2025   STATISTICAL METHODS FOR BIOLOGY

**Instructor:**    Dr. Daniel Yorgov       3 Credit Hours       **Course Website:** purdue.brightspace.com

**E-Mail:**        yorgovd@pfw.edu        (email is the best way to reach me)

**Office Hours at** https://purdue-edu.zoom.us/j/97631125218       TR 11 am – 12 pm, or by appointment

**Free Tutoring:**  Details TBA soon (tutoring will be available in KT G19 and may also be available online.)

This is an **asynchronous online course with no scheduled meeting time**. You can complete the work at your convenience. Submission of at least one graded item per week constitutes attendance.

I suggest **scheduling your study time** just as you would for an on-campus course. Mark specific days and times for this course in your weekly calendar and commit to them.

Do not just wait until you have "free time". Due to the fast pace of this class, it is imperative that you keep up with the material and do not fall behind.

**Fast Pace**: An online mathematics course requires a serious time commitment, especially during the summer. Learning Statistics for the first time also requires a significant amount of time. We will cover the same material as a regular 16-week lecture course offered in the fall or spring semesters, but in only 6 weeks. This is almost three times faster than the regular semester pace.

**Time Commitment:** Mathematics and Statistics are **not spectator sports**. No pain, no gain! Face-to-face 3-credit summer classes meet for 7 hours per week. A general rule of thumb for math classes is that for every hour of class time, you should expect to spend 1-2 hours studying and doing homework outside of class. If you can spend **12-20 hours per week on this course**, turn in all assignments on time, watch the videos, and seek help when needed, you will not only pass with a good grade but also find it a beneficial experience. If you are **overwhelmed with other commitments** this summer or feel uncomfortable using technology and computer-enhanced learning, you may want to consider taking a regular semester version of this class instead. If you can commit the time and energy, then **welcome aboard and let's get started!**

> *"A genius is a talented person who does his homework." ~Thomas Edison*

You should expect that the first few chapters will entail a good deal of review and will likely take less study time. However, later material will become less familiar for most of you and will require more effort and time to learn the topics. Additionally, the homework will take longer because there will be more steps involved in answering each question. Please plan accordingly!

**Communication Channels:** I will use Brightspace for announcements, posting worksheets, videos, links, assignments, etc. Please also check your school email at least daily for announcements and updates.

University statements on Title IX, ADA, and other student rights are linked in the "**University Policies**" module on our Brightspace page; they apply to this course.

Discussion Board:
- The discussion board can be used if you want to talk about issues you are having with classwork, class materials, homework questions, etc. Click *Discussions* at Brightspace to access the forums.
    o If you have good suggestions or strategies that can help your classmates, please post! Homework bonus points might be rewarded for useful posts or if you answer to a course related or HW question before I do.

Office Hours will be via Video Chat **Tuesdays and Thursdays 11 am – 12 pm**, or by appointment. You can ask about the rules, class material, or simply join me if you have questions or concerns.

Join at https://purdue-edu.zoom.us/j/97631125218 in Firefox or Chrome or with a free smartphone app.

Anonymous feedback at: https://tinyurl.com/uadthvs
- You can provide anonymous comments and suggestions about the way I have deployed the online materials, how you feel about the expectations, etc. You can do this more than once!

## Required Materials

1.  Textbook:  *Daniel, Wayne W.; Cross, Chad L. (2013), Biostatistics: A Foundation for Analysis in the Health Sciences,* **10th Edition***, ISBN 978-1-118-30279-8.* Material from Chapters 1 - 7 of the selected text will be covered. **Any format (hardcover, paperback, or <u>any</u> electronic format) is fine.**

2. Calculator or Calculator Emulator is **required**.

You can use an actual **TI-83/84+/84+ CE** graphing calculator or a TI-84+ calculator emulator on a computer. There are also some TI-84+ emulator apps for phones. Alternatively, you could **rent** a calculator from the Student Government: https://www.pfw.edu/student-government/services/rentals. Although you could use another calculator or software for this class, I would advise against it: all support materials and examples in the lecture notes and videos will be with TI-83/84+.

3. Printed lecture notes, 10-15 pages per chapter.

The notes for the class are fill-in-the-blanks type, and it should be easier if you use a hard copy to do fill in the blanks. If printing at home/work is a problem, University computer labs will be open, and you have free credit for printing there. If you are not in town and have no access to a printer, most public libraries offer printing for a nominal fee.

**Use of Artificial Intelligence (AI):** You may use AI, such as ChatGPT, to help generate ideas and brainstorm. However, be aware that the output generated by these programs may be inaccurate, incomplete, or false. For all homework questions, you are expected to derive your own solutions. You must work alone without any human or AI assistance on quizzes and exams.

**Academic Honesty:** Plagiarism is the use of another person's words or ideas without giving credit to that person. Plagiarism and cheating of any kind will not be tolerated and will be immediately reported to the dean. Cheating may result in a course grade of F and possibly expulsion from the University. You are responsible for adhering to campus policies on academic honesty as stated in PFW's Code of Student Conduct (see http://www.pfw.edu/committees/senate/code/).

**<u>Objectives</u>** Statistics plays a very important role in health sciences. Statistical methods are applied in clinical trials, disease detection and treatment, drug development, and more. Knowledge of statistics can be very helpful if you would like to make important decisions to improve the overall quality of life.

This course introduces many basic concepts of statistics and probability that will prepare you to successfully analyze data. Probability and statistics are complementary areas, and together they provide powerful tools for data analysis. The course meets the following official objectives:

"In the area of statistics, students should be able to:
   (1) Understand various methods of collecting data, appreciate basic properties of data by plotting graphs, calculating meaningful values, and by comparing one or more data sets.
   (2) Use the data to make meaningful inference about the population from which the data are drawn.
In the area of probability, the students should be able to:
   (1) Understand basic concepts of probability.
   (2) Study the properties of data of various shapes and characteristics, and
   (3) Apply the knowledge of probability to analyze data."

## <u>Assessment</u>

**Online Homework (HW):** The online homework will consist of 7-8 multiple-choice assignments posted on Brightspace. You will have 3 attempts at each assignment, and the best result will be recorded.

**Quizzes:** Three online quizzes will be given during the semester. Quizzes will predominantly consist of multiple-choice or short-answer questions, with some questions requiring typed-in answers.

**Tests:** One midterm and a final exam will be given online. Tests will consist of a combination of computational problems with multiple-choice and short-answer questions.

**Activities:** Throughout the semester, you will be asked to complete activities online or upload your work to Brightspace. Specific details will be provided throughout the semester. Late activities will be accepted up to two calendar days from the due date, but there may be a penalty on the score.

## Computing Your Final Grade:

| Online Homework | 20% | A: 90% - 100% |
|---|---|---|
| Quizzes | 30% | C: 70% - 79.9% |
| Midterm | 20% | B: 80% - 89.9% |
| Final Exam | 20% | D: 60% - 69.9% |
| Activities | 10% | F: 59.9% and below |
| Total | 100% | |

### YOU RECEIVE THE GRADE YOU EARN, NOT THE GRADE YOU NEED!

**Talk to Me:** I will give my best effort to make this class run smoothly for you, but it is important that you **communicate with me when any issues arise** or if there are any problems/concerns.

**Other Concerns:** You are expected to read and follow all the information in the current PFW Student Handbook and Planner. In particular, be familiar with the *PFW Code of Student Rights, Responsibilities, and Conduct.* A copy can be found on the website http://www.pfw.edu/committees/senate/code/.

**Information Technology Services Help Desk:** If you have questions concerning the use of computers at PFW, hardware and software support or student email accounts, please contact the IT Help Desk in KT 206, telephone (260) 481-6030, or visit https://www.pfw.edu/offices/information-technology-services/.

**Special Needs:** PFW is committed to providing reasonable accommodation and access to programs and services to persons with disabilities. If you have a disability and need assistance, special arrangements can be made to accommodate most needs. Contact the Director of Services for Students with Disabilities as soon as possible to work out the details. Once the Director has provided you with a letter attesting to your needs for modification, bring the letter to me. For more information, please visit the web site for Services for Students with Disabilities (SSD).

**Personal Problems:** If at any point during the semester, you find yourself in need of talking to someone about an academic, personal, or family crisis, please use the free resources that the University provides.
- Academic, Health, and Wellness resources, including free counseling:

https://www.pfw.edu/offices/enhancement-learning-teaching/pedagogical-resources/student-support-services#services-3

| STAT 240 | **Tentative** Course Calendar Summer 2025 (subject to change with notice) | | Instructor: Yorgov |
|---|---|---|---|

| Week of | Part 1 | Part 2 | |
|---|---|---|---|
| May 19 | Intro, 1.1-1.5 | 2.1-2.4 | |
| May 26 | 2.4, 2.5, *Memorial Day* | 3.2-3.4 | Quiz 1 Ch.1-2 out Friday |
| June 2 | 3.5, 4.1-4.3 | 4.5-4.7, 5.1 | Quiz 1 due Wednesday $11^{:59}$ pm<br>Midterm Ch.1-3,4.1-4.3 out Friday |
| June 9 | Midterm, 5.2-5.4 | 5.5, 5.6, 6.1-6.2 | Midterm due Tuesday $11^{:59}$ pm<br>Quiz 2 Ch. 5 out Friday |
| June 16 | 6.7, 6.4-6.5 | 6.6, 6.8, 7.2 | Quiz 2 due Tuesday $11^{:59}$ pm<br>Quiz 3 Ch. 6 out Friday |
| June 23 | 7.4-7.5 | 7.6, Final | Quiz 3 due Tuesday $11^{:59}$ pm<br>Final out Wednesday, due Friday, June $27^{th}$, $11^{:59}$ pm |

**Important Dates:** May 21 – Last Day for Full Refund
June 13 – Last Day to Withdraw Online (with W grade)