



STA200 Introduction to Statistics II Syllabus, Summer 2025

INFORMATION

- Instructor-Cheng Peng, PhD
- Zoom Office Hours-Tuesday/Wednesday/Thursday 1:30 PM – 3:00 PM
- Email- CPeng@wcupa.edu
- Course Web Page: <https://pengdsci.github.io/STA200/> (**with Zoom link**)

TEXTBOOK AND ADDITIONAL MATERIALS

- There is no textbook required for this course. All course materials will be posted on the course web page.
- The course requires R programming. You are not expected to have any prior experience in R coding. We will start from scratch.

COURSE OBJECTIVE

We will review topics from MAT121, introduce new methods of data analysis, and introduce and use the statistical software R, which is a free open-source program.

TOPICS

We will review topics from 121, including the normal distribution, hypothesis testing, and linear regression. New topics will be introduced, including analysis of variance, multiple regression, categorical data and chi-square analysis, and nonparametrics.

ASSESSMENT METHODS FOR STUDENT LEARNING OBJECTIVES

There will be no homework in this summer course. The ONLY assignments to be graded are the weekly exams and the final exam. You are expected to use R in every weekly exam and the final.

All exams will be administered via D2L. Every weekly exam will have about 30 multiple-choice questions based on the lecture notes for the week. Please read every lecture note carefully.

CALCULATION OF GRADE

| Assessment | Date | Proportion |
|-----------------|-------------------|------------|
| Weekly Exams #1 | Sunday, 7/6/2025 | 20% |
| Weekly Exams #2 | Sunday, 7/13/2025 | 20% |
| Weekly Exams #3 | Sunday, 7/20/2025 | 20% |
| Weekly Exams #4 | Sunday, 7/27/2025 | 20% |
| Final exam | Sunday, 8/3/2025 | 20% |

EXAMS/FINAL EXAM

There are 4 weekly exams and a final exam. Exams will be on D2L and will cover

- Concepts learned in class
- Basic R commands (you can use R as a calculator; no calculator is needed)
- Analysis using the provided R output.

TENTATIVE COURSE SCHEDULE

(Please see the course web page for the updated course materials)

| Week | Topic |
|------|---|
| 1 | Introduction R and RStudio Installation Getting started with R – R As A Graphing Calculator Review of Concepts of MAT 121 Extension to Simple Linear Regression (review using R) |
| 2 | Unit 1-Categorical Data Analysis Chi-square distribution Goodness of fit test Test for independence Relative Risk |
| 3 | Unit 2-Parametric vs. Nonparametric Testing Assessing for Normality One-sample t-test/Sign Test Two-sample t-test/Wilcoxon Rank Sum Test Paired t-test/Wilcoxon Signed Rank Test |
| 4 | Unit 3-ANOVA Principles of Experimental Design One-way ANOVA/Kruskal-Wallis Test Multiple Comparison Procedures Randomized Block Design Two-way ANOVA |
| 5 | Unit 4- Multiple Linear Regression Method of Least Squares Assessing for Model Utility Prediction and Estimation Residual Analysis First-order multiple regression model Basics of Polynomial Regression |

CLASS POLICIES

- **Missed exams can only be made up with a valid, written, university-approved excuse, and any missed exam must be made up within a week of the originally scheduled exam.** If you miss an exam without communicating with me **beforehand**, you will not be given a makeup exam.
- Please make use of office hours if extra help is needed.
- All course materials will be posted on the course web page. D2L is ONLY used for exams.
- There will be no extra credit opportunity in this course.

Programmatic Student Learning Outcomes for the Bachelor of Science in Applied Mathematics:

1. **Mathematical Concepts.** Students will demonstrate understanding of and the ability to apply mathematical concepts in the areas of calculus, linear algebra, differential equations, statistics, and numerical analysis.
2. **Applications and Modeling.** Students will apply methods from the mathematical sciences to model real-world problems.
3. **Technology.** Students will use computer software to solve mathematical or scientific problems.
4. **Cognate.** Students will demonstrate understanding of a cognate area related to their concentration.
5. **Communication.** Students will demonstrate the ability to communicate effectively in both oral and written form.
6. **Information Literacy.** Students will demonstrate the ability to learn independently by locating and evaluating materials relevant to a given problem.

COURSE STUDENT LEARNING OBJECTIVES

CL01) Students will be able to use SPSS proficiently. [PSLO3]

CL02) Students will be able to choose the appropriate method of data analysis among those introduced. [PSLO 1, 2, and 6]

CL03) Students will build their understanding of statistical jargon and terminology, and use both correctly when communicating results of statistical analysis. [PSLO 4 and 5]

ACADEMIC & PERSONAL INTEGRITY

It is the responsibility of each student to adhere to the university's standards for academic integrity, found here on the [University website](#). Violations of academic integrity include any act that violates the rights of another student in academic work, that involves misrepresentation of your own work, or that disrupts the instruction of the course. Other violations include (but are not limited to): cheating on assignments or examinations; plagiarizing, which means copying any



part of another's work and/or using ideas of another and presenting them as one's own without giving proper credit to the source; selling, purchasing, or exchanging of term papers; falsifying of information; and using your own work from one class to fulfill the assignment for another class without significant modification.

*****Proof of academic misconduct can result in the automatic failure and removal from this course.*****

If academic dishonesty is discovered, here is my policy:

1. The student(s) involved will receive a 0 on the assignment.
2. The student(s) involved will be contacted by email within 24 hours of the discovery of the impropriety.
3. A Report of Violation of Academic Integrity Part I will be completed, and the involved student(s) will be required to sign the form, which will be submitted to the appropriate Department Chair/Dean.

STUDENTS WITH DISABILITIES

If you have a disability that requires accommodations under the Americans with Disabilities Act (ADA), please present your letter of accommodations and meet with me as soon as possible so that I can support your success in an informed manner. Accommodations cannot be granted retroactively. If you would like to know more about West Chester University's Services for Students with Disabilities (OSSD), please visit them at 223 Lawrence Center. Their phone number is 610-436-2564, their fax number is 610-436-2600, their email address is ossd@wcupa.edu, and their website is at <https://www.wcupa.edu/universityCollege/ossd/>. In an effort to assist students who either receive or may believe they are entitled to receive accommodations under the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973, the University has appointed a student advocate to be a contact for students who have questions regarding the provision of their accommodations or their right to accommodations. The advocate will assist any student who may have questions regarding these rights. The Director for Equity and Compliance/Title IX Coordinator has been designated in this role. Students who need assistance with their rights to accommodations should contact them at 610-436-2433.

EXCUSED ABSENCES POLICY

Students are advised to carefully read and comply with the excused absences policy, including absences for university-sanctioned events, contained in the WCU Undergraduate Catalog. In particular, please note that the "responsibility for meeting academic requirements rests with the student," that this policy does not excuse students from completing required academic work, and that professors can require a "fair alternative" to attendance on those days that students must be absent from class in order to participate in a University-Sanctioned Event.

REPORTING INCIDENTS OF SEXUAL VIOLENCE



West Chester University and its faculty are committed to assuring a safe and productive educational environment for all students. In order to comply with the requirements of Title IX of the Education Amendments of 1972 and the University's commitment to offering supportive measures in accordance with the new regulations issued under Title IX, the University requires faculty members to report incidents of sexual violence shared by students to the University's Title IX Coordinator. The only exceptions to the faculty member's reporting obligation are when incidents of sexual violence are communicated by a student during a classroom discussion, in a writing assignment for a class, or as part of a University-approved research project. **Faculty members are obligated to report sexual violence or any other abuse of a student who was, or is, a child (a person under 18 years of age) when the abuse allegedly occurred to the person designated in the University Protection of Minors Policy.** Information regarding the reporting of sexual violence and the resources that are available to victims of sexual violence is set forth at: <https://www.wcupa.edu/admin/diversityEquityInclusion/sexualMisconduct/default.aspx>.

EMERGENCY PREPAREDNESS

All students are encouraged to sign up for the University's free WCU ALERT service, which delivers official WCU emergency text messages directly to your cell phone. For more information, visit www.wcupa.edu/wcualert. To report an emergency, call the Department of Public Safety at 610-436-3311.

ELECTRONIC MAIL POLICY

It is expected that faculty, staff, and students activate and maintain regular access to University-provided e-mail accounts. Official university communications, including those from your instructor, will be sent through your university e-mail account. You are responsible for accessing that mail to be sure to obtain official University communications. Failure to access will not exempt individuals from the responsibilities associated with this course.

Inclusive Learning Environment and Anti-Racist Statement

Diversity, equity, and inclusion are central to West Chester University's mission as reflected in our [Mission Statement](#), [Values Statement](#), [Vision Statement](#), and [Strategic Plan: Pathways to Student Success](#). We disavow racism and all actions that silence, threaten, or degrade historically marginalized groups in the U.S. We acknowledge that all members of this learning community may experience harm stemming from forms of oppression including but not limited to classism, ableism, heterosexism, sexism, Islamophobia, anti-Semitism, and xenophobia, and recognize that these forms of oppression are compounded by racism.

Our core commitment as an institution of higher education shapes our expectations for behavior within this learning community, which represents diverse individual beliefs, backgrounds, and experiences. Courteous and respectful behavior, interactions, and responses are expected from all members of the University. We must work together to make this a safe and productive learning environment for everyone. Part of this work is recognizing how race



and other aspects of who we are shape our beliefs and our experiences as individuals. It is not enough to condemn acts of racism. For real, sustainable change, we must stand together as a diverse coalition against racism and oppression of any form, anywhere, at any time.

Resources for education and action are available through WCU's [Office for Diversity, Equity, and Inclusion](#) (ODEI), DEI committees within departments or colleges, the student [ombudsperson](#), and centers on campus committed to doing this work (e.g., [Dowdy Multicultural Center](#), [Center for Women and Gender Equity](#), and the [Center for Trans and Queer Advocacy](#)).

Guidance on how to report incidents of discrimination and harassment is available at the University's [Office of Diversity, Equity and Inclusion](#).