PURDUE UNIVERSITY FORT WAYNE

Dual Credit (PFW STAT 30100) Statistics Syllabus

Course Title: Statistics

Course Number: STAT 30100

Instructor Name:

Instructor Email:

Office Hours:

Office Location:

Course Description:

DC Statistics is a math class providing an alternative course of study both for students who will be required to take a statistics course in college, as well as for students who, in high school, want an alternative to Calculus.

Course Prerequisites:

Enrolling students must have met the pre-requisites for this class, which include:

- Passing Algebra 2, and preferably (my preference, NOT a state requirement) Pre-Calculus, or Quantitative Reasoning
- Students will earn college credit (3 credit hours) from Purdue Fort Wayne for a grade of C- or better. Semester grades are averaged to create the grade sent to PFW.
- Students should be academically focused individuals willing to put in time outside of school.

Course Access:

All course information can be found on the course Schoology page.

Course Goals:

- Highlight the link of mathematics to the real world.
- Develop a wide base of mathematical knowledge, including
  - basic statistics skills and concepts,
  - problem solving, predicting, critical thinking, and generalizing
- Incorporate the use of general academic skills such as
  - communicating mathematics concepts,
  - understanding and using technology, and
  - working collaboratively.

Indiana College Core Area 3 Quantitative Reasoning Competencies

3.1. Interpret information that has been presented in mathematical form*.

3.2. Represent information/data in mathematical form* as appropriate

*mathematical form = functions, equations, graphs, diagrams, tables, words, and geometric figures.

3.3. Demonstrate skill in carrying out mathematical (e.g. algebraic, geometric, logical, statistical) procedures flexibly, accurately, and efficiently to solve problems.
3.4. Analyze mathematical arguments, determining whether stated conclusions can be inferred.
3.5. Communicate which assumptions have been made in the solution process.
3.6. Analyze mathematical results in order to determine the reasonableness of the solution.
3.7. Cite the limitations of the process where applicable. Communication
3.8. Clearly explain the representation, solution, and interpretation of the math problem.

Student Learning Objectives:

1. Display, analyze, and interpret data
2. Use data to make models and predictions
3. Design studies and experiments
4. Perform inference procedures

Learning Resources & Texts

- Primary Textbooks: The Practice of Statistics (TPOS), Sixth Edition Updated Version, in addition to other supplemental materials. You will be given a copy to take home and I have a partial class set.
- We will be utilizing your computers to use MY AP, conduct research, record and analyze data, and type papers when needed.
- Graphing Calculator: A TI-84 will be utilized often and will be provided to you. It is HIGHLY suggested that you purchase your own TI-84, as it will be required that you own your own calculator in college.

Assignments

There will be NO retakes on tests, as this is a DC class. You do not get retakes on the AP exam, and you do not get retakes in college. Expect one practice test and one actual test per unit and/or a project. Utilizing the AP Statistics Formula Sheet on your tests is an expectation. No other notes or resources will be allowed.

It is extremely important that you stay on top of your homework. I will take assignments up to the day of the test as they can take a good amount of time, but you are going to be best served getting them done at the due date. Exceptions will be made for absent students, per school policy. There will not be much time in class for going over homework. You will typically be assigned odd-numbered problems; please check their answers using the selected answers in the back of the book. Check answers to even problems with a classmate. Since you have access to the answers, I expect your homework turned in with correct answers and grade homework for completion. If you copy answers out of the back of the books, expect a failing grade and to probably fail your tests as well.

Grading Scale:

This course will utilize the FWCS 80/20 Summative/Formative split. Assignments will be formative, tests and projects will be summative.

Course Evaluation:

Students will be provided a link through Schoology at the end of the year. This link will be to a form created and managed by the Collegiate Connection office, all data collected is anonymous and will be shared with instructors and their departments at the end of the school year.

Academic Misconduct / Plagiarism / AI:

Academic Misconduct, including phone usage on assessments, plagiarism (using other people's ideas/words and not giving them credit thus implying the work is your own original work) or using your own work from a previous course without the express permission of the instructor, is taken very seriously at any learning institution. Cheating is taken very seriously in this class. Please be aware of what behaviors constitute academic misconduct (See Bulletin, Code of Students Rights, Responsibilities and Conduct Part II. A.) If caught cheating or plagiarizing, a student may receive no credit on the assignment and may result in an F for the course. Any instances of academic dishonesty may be reported to the Office of Student Conduct and Care and your Department Chair and may result in expulsion from the University. Additional potential consequences can be found under: potential consequences (See Bulletin, Code of Students Rights, Responsibilities and Conduct, Part III. A.: i.e., failure of the assignment, failure of the course and/or dismissal from the university) of such behavior.

There should be absolutely no AI usage whatsoever in this course. Be aware that AI frequently gives inaccurate results and does not help you learn…imagine using a calculator for basic adding and subtracting, but it gives you the wrong answer sometimes…

Student Support Services

Northrop's guidance department has a resources for a variety of physical, mental health, and academic needs.

Please reach out to me at any time if you have questions or concerns. I generally check my email between 5 am and 10 pm.

Purdue University Fort Wayne is committed to your academic and personal success. Visit the Student Support Services page for a list of student support services, including academic services, technology services, health and wellness, and support from administrative offices. For help with technology, including Brightspace, visit the IT Services Student Technology Support page.

Your emotional wellness and mental health are important. If you have a mental health disorder, are struggling with your mental health, your stress overwhelms your ability to cope with it, or you find yourself needing emotional support, please talk to someone. If you or someone you know is in a mental health crisis situation, call 911 or go to the local emergency room. Otherwise, please reach out to our guidance department.

Course Schedule

Unit	Approx Time	Topics to be discussed {More mini-projects may be added}	Book Chapters
I	6 - 8 weeks	Exploring One-Variable Data • Class Introduction • Analyzing Categorical Data • Displaying Quantitative Data with Graphs • Describing Quantitative Data with Numbers • Describing Location in a Distribution • Density Curves and Normal Distributions	• TPOS chapters 1 and 2
II	2 - 3 weeks	Exploring Two-Variable Data • Scatterplots and Correlation • Least-Squares Regression • Comparing Two Sets of Data • Nonlinear Regression	• TPOS chapter 3
III	2 - 3 weeks	Gathering Data • Sampling and Surveys • Experiments • Using Studies Wisely	• TPOS chapter 4
IV	6 - 7 weeks	Probability, Random Variables, and Probability Distributions • Randomness, Probability, and Simulation • Probability Rules • Conditional Probability and Independence • Discrete and Continuous Random Variables • Transforming and Combining Random Variables • Binomial and Geometric Random Variables	• TPOS chapters 5 and 6
		Winter Break	
V	2 - 3 weeks	Sampling Distributions • Introduction to Sampling Distributions • Sample Proportions • Sample Means	• TPOS chapter 7
VI	5 - 6 weeks	Inference for proportions • Confidence Intervals for proportions and difference in proportions • Significance Tests for proportions and difference in proportions	• TPOS chapters 8 and 9

VII	3 - 4 weeks	Inference for means • Confidence Intervals for means and difference in means • Significance Tests for means and difference in means	• TPOS chapter 10 and 11
VIII	2 - 3 weeks*	Inference for Categorical Data : Chi-Square • Chi-Square Tests for Goodness of Fit • Inference for Two-Way Tables	• TPOS chapter 12 •
IX	2 weeks*	Inference for Quantitative Data: Slopes • Inference for Linear Regression * These units will be condensed or skipped as needed	• TPOS chapter 12
		Group or Individual Project Final Exam	

Additional Information:

Student Conduct Expectations

1. Students will conduct themselves in a manner befitting their station. Choosing to sign up for a DC/AP class demonstrates a strong desire to learn, a record of high academic achievement, and an ability to follow school rules and procedures.

2. I do not anticipate having any students having major behavior issues in this class, but it is expected that students will adhere to the FWCS code of conduct.

3. It is expected that students will be active learners; being an active learner includes not just paying attention in class, but asking questions, taking notes, participating in group work, and demonstrating a desire to learn.

========== Additional classroom policies

* **Absent Test Policy**-
  Tests missed due to absences MUST be made up within one week, after school or during a study hall.

* **Late finish testing policy**:
  Tests must be turned in at the specified time, which will typically be the bell.

* **Technology Misuse:**
  Cell phone use during class is prohibited unless you need the phone for 2FA to sign in to your college board account.

* **Grading:**
  An AP style scale will be utilized for grading free response test question and determining the actual test grades.

Final Exam

There will be a test or project to finish the first semester and a test or project to finish the second semester.

Attendance

Daily attendance will be taken promptly daily when the bell rings. Students are expected to be in the room when the bell rings.

Please ask for a pass before leaving the room for any reason. Keep in mind the school policies on passes…No passes the first or last ten minutes of class. You will be given 3 passes per quarter.

You do not need to ask permission to grab a tissue, throw away trash/spit out gum, or sharpen a pencil.

REQUIRED MATERIALS

- **Pencil and eraser**
- **Homework to turn in**
- **Notebook to keep previous notes and work in**
- **Laptop**