# Walters State Community College Course Syllabus

| Course Name and Number | MATH 1530 Probability and Statistics  |
| --- | --- |
| Semester and Year | Spring 2021 |
| Instructor Name | Tina Williamson |
| Office Location | CHS Classroom Room 119 |
| Office Hours | CHS 7:45-8:15 AM M-F |
| Phone | 423-487-5602 |
| Email | trwilliamson@ws.edu |
| Division Secretary Information | 423-585-6864 |
| Supervisor Information | Dean of Mathematics 423-585-6879 |

| Catalog Course Description | An introduction to probability and statistics without calculus including descriptive statistics, probability distributions, the normal distribution, testing hypotheses, the t-test, and estimates and sample sizes. The student should check transfer institution catalogs to decide between MATH 1530 and MATH 2050 Probability and Statistical Applications. |
| --- | --- |
| Prerequisites | Two years of high school algebra or completion of Learning Support mathematics |
| Co-Requisites | Math 0030 is required for students with ACT math score below 19 (or equivalent score as determined by the college placement and assessment procedure) or have not completed all learning support mathematics requirements.  |
| Optional Textbook | Fundamentals of Statistics: Informed Decisions using Data 5th edition, by Michael Sullivan, III. |
| Required Materials | MyLab Math software access code |
| Supplementary or Optional Materials | TI-83 plus, TI-84 or TI-84 plus graphing calculator is required for course –discuss with instructor if you own a different graphing calculator |
| General Education Course Designation | Yes |

## Course Outcomes

1. Organize and summarize data using frequency distributions, histograms, and descriptions of central tendency and variation.
2. Compute the population mean, variance, and standard deviation given a discrete probability distribution and compute probabilities for applied problems using the binomial distribution.
3. Compute probabilities including the use of the addition rule, the multiplication rule, conditional probabilities, and counting techniques.
4. For applied problems, compute probabilities using the normal distribution and the central limit theorem and find percentile scores using normal distributions.
5. Make inferences about population means and proportions from sample data using confidence intervals.  Determine sample sizes required to estimate means.
6. Make scatterplots of paired data, analyze the data using linear regression and correlation, and make predictions.
7. Test claims about population means using hypothesis testing.
8. Use computer programs and/or a graphing calculator to perform statistical analysis.

## Instructional and Evaluation Methods:

Grade Composition

90 - 100 % A Homework Average counts 10%

80 – 89 % B Quiz Average counts 20%

70 – 79% C Test Average counts 50%

60 – 69% D Final Exam counts 20%

 0 – 59% F

Class Grade=0.10(Homework Avg.)+0.20(Quiz Avg.)+0.50(Test Avg.)+0.20(Final Exam)

## Testing Procedures:

1. Regular attendance is needed for your success in this course, whether in-person or virtual. It is the student’s responsibility to contact the instructor BEFORE each planned or school-sponsored absence. **Please contact financial aid before dropping this or any other course.**
2. **HOMEWORK** Homework will be administered through the software package MyMathLab. Homework assignments will have an unlimited number of attempts up to the deadline assigned. Extensions may be granted on a case-by-case basis if the student contacts the instructor **prior** to the due date. Otherwise, a 25% deduction will be taken from any questions completed from the assignment after the due date. Any homework assignment that is not completed within a week from the due date will result in a grade of zero unless the student was granted an extension. The lowest **three** homework assignment grades will be dropped at the end of the semester.
3. **QUIZZES** Quizzes will be administered through the software package MyMathLab. Students will have **three** attempts per quiz up to the deadline assigned. Extensions may be granted on a case-by-case basis if the student contacts the instructor **prior** to the due date. Otherwise, the quiz will receive a grade of zero. **The lowest quiz grade will be dropped** at the end of the semester.
4. **Tests** There will be 4 **proctored** tests. The tests will be administered in MyMathtLab and must be proctored either in person or with Microsoft Teams. You will not be allowed to use your notes or the internet. You will be allowed to bring one side of one 8.5in-by-11in piece of paper with handwritten notes.

\* If one test is missed for any reason that was not approved prior to the date of the test, the final exam score will replace the missed test score. If all four tests are taken and one score is lower than the final exam, the final exam score will replace the lowest test score.

\*If a student arrives late to take a test and other students have already completed the exam and left the room, the student arriving late will not be allowed to take the exam. It will be counted as a missed test.

\*A student taking the test virtually must log into Microsoft Teams and begin the test within 30 minutes of the class test start time. If not, it will be counted as a missed exam.

\*If more than one test is missed without prior approval, the first missed test score will be replaced by the final exam score. Make-ups for additional missed tests will be at the discretion of the instructor.

1. **FINAL EXAM** There will be a **proctored** mandatory comprehensive final exam. The final exam will be administered in MyMathLab. The exam must be proctored either in person or with Microsoft Teams. You will not be allowed to use your notes or the internet for your final exam. You will be allowed to bring both sides of one 8.5in-by-11in piece of paper with handwritten notes. The Final Exam is now scheduled for Wednesday, May 5, 2021: 8:30 AM – 11:00 AM.

## Grading Scale:

| A | 90-100 |
| --- | --- |
| B | 80-89 |
| C | 70-79 |
| D | 60-69 |
| F | 0-59 |

## Assignments/Projects: NA

## Class Participation: NA

## Drop Deadline:

3/26/2021

## ONLINE/ WEB-ENHANCED COURSE COMPONENTS

| Virtual Office Hours | By Appointment Only |
| --- | --- |
| Library Information | n/a |
| Technical Support | n/a |
| Web Addresses/Resources | n/a |
| Guidelines for Communication: Email, Discussion Posts, Chat  | n/a |

## Other Requirements: Program Specific Policies NA

## Faculty Member Course Specific Details NA

## Course Ground Rules

All students attending Walters State Community College, regardless of the time, location, or format of the class, must abide by the rules and regulations outlined in the current Walters State Catalog/Student Handbook and the current Walters State Timetable of Classes.

[Walters State Catalog (opens in new window)](http://catalog.ws.edu/)

catalog.ws.edu/

[Walters State Timetable of Classes (opens in new window)](http://ws.edu/admissions/registration/)

ws.edu/admissions/registration/

Students must attend the first day of on-ground class or contact the instructor prior to the first class. Failure to do this may result in being dropped from the class. Excessive absences may substantially lower the course grade.

Regular class attendance is a student’s obligation for any course regardless of format. (See the Walters State Catalog/Student Handbook). If a student misses class, it is his or her responsibility to contact the instructor regarding missed assignments and/or activities and to be prepared for the next class assignment.

Students enrolled in web courses must follow the course attendance policy defined for online attendance during the first week of class and throughout the term. Failure to do this may result in being dropped from the class during week one OR may result in the accrual of absences which may negatively impact the student’s grade in the course.

Plagiarism, cheating, and other forms of academic dishonesty are prohibited. The minimum penalty for cheating is a “0” (zero) on the examination or assignment. Academic dishonesty may result in an “F” for the course. Additional information can be found in the WSCC Catalog/Student Handbook.

 [Walters State Catalog (opens in new window)](http://catalog.ws.edu/)

catalog.ws.edu/

Students with disabilities must register with Student Support Services each semester in the Student Services Building, Room U134 (phone 423-585-6892) if they need any special facilities, services, or consideration.

[Walters State Student Support Services (opens in new window)](http://ws.edu/student-services/disability/)

http://ws.edu/student-services/disability/

Students in need of tutoring assistance are encouraged to contact the Office of Student Tutoring located as follows:

* Morristown Campus - Student Services Building Room L107 – (423) 585-6920
* Greeneville Campus – Room 420 - (423) 798-7982
* Sevierville Campus - Marshall-Maples Hall Room 118 – (865) 286-2787
* Claiborne Campus – Room 123A (423) 851-4761

Specific tutoring assistance in mathematics and writing is available in-person and online as follows:

Morristown Campus – English Learning Lab – HUM 120 – (423) 585-6970

[Walters State English Learning Lab (opens in new window)](https://www.ws.edu/academics/humanities/writing-lab)

ws.edu/academics/humanities/writing-lab

Morristown Campus – Mathematics Lab – MBSS 222 - (423) 585-6872

[Walters State Mathematics Learning Lab (opens in new window)](http://ws.edu/academics/mathematics/learning-lab)

ws.edu/academics/mathematics/learning-lab

Students who need assistance with computing and technology issues should contact the IET Helpdesk by phone at Morristown: 423-318-2742 Greeneville: 423-798-8186 or Sevierville: 865-286-2789 or on-line access.

[Walters State Helpdesk (opens in new window)](http://helpdesk.ws.edu/)

helpdesk.ws.edu

Students receiving any type of financial aid or scholarship should contact the Financial Aid Office before making any changes to their schedule. Schedule changes without prior approval may result in loss of award for the current term and future terms.

All forms of student Financial Aid may be jeopardized or lost due to the lack of Satisfactory Academic Progress in one or multiple courses. Lack of Satisfactory Academic Progress may negatively impact a student’s degree/certificate completion pace and further jeopardize Financial Aid eligibility.

Students who have not paid fees on time and/or are not correctly registered for this class and whose names do not appear on official class rolls generated by the Walters State student information system (StarNET) will not be allowed to remain in class or receive credit for this course.

Electronic devices must not disrupt the instructional process or college-sponsored academic activity. Use of electronic devices is prohibited unless use of the device is relevant to the activity and use is sanctioned by the faculty member in charge. Electronic devices that are not relevant to the activity or sanctioned by the faculty member in charge should be set so that they will not produce an audible sound during classroom instruction or other college-sponsored academic activity.

## Cancellation of Classes and Academic Continuity

For information related to the cancellation of classes due to inclement weather or other events, please check the Senators Emergency Text system or the college’s Web site at:

[Walters State Homepage (opens in new window)](http://ws.edu/home/), ws.edu

[Walters State Facebook page (opens in new window)](https://www.facebook.com/Walters-State-Community-College-31979634995/) www.facebook.com/Walters-State-Community-College-31979634995/

[Walters State Twitter page (opens in new window)](https://twitter.com/waltersstate),

or call the college’s student information line, 1-800-225-4770, option 1; the Sevier County Campus, (865) 774-5800, option 7; the Greeneville/Greene County Campus (423) 798-7940, option 7; or the Claiborne County Campus, 423-636-6200, option 7. Also, please monitor local TV and radio stations for further announcements.

When an event or disaster interrupts the scheduled operations of the college and the ability to proceed with the academic course activities as planned, the college and your instructor may alter the course plan outlined in the syllabus. Should an event occur, students should refer to their course e-Learn pages and/or class materials previously delivered to receive guidance from their instructor. Students should continue to monitor the official college channels of communication listed in the above paragraph. If you would like to sign up for the Senators Emergency Text system, please go to the following Web site: [Senator Emergency Text System (opens in new window)](http://ws.edu/set/) ws.edu/set/

Dual Enrollment students attending on a high school campus should refer to the high school inclement weather cancellations.

## Walters State Quality Enhancement Plan Vision

Walters State Community College’s Quality Enhancement Plan aims to improve the academic advising process to promote student success through the following ways: creating professional development trainings and utilizing technology that transforms the advising community, helping students become connected and engaged with campus resources, and instilling students with a sense of individual responsibility that will foster academic success.

## Additional Course Details

Chapter 1 – Data Collection

1.1 Introduction to the Practice of Statistics

1.2 Observational Studies versus Designed Experiments (Optional)

1.3 Simple Random Sampling

1.4 Other Effective Sampling Methods

Chapter 2 – Organizing and Summarizing Data

 2.2 Organizing Quantitative Data: The Popular Displays

Chapter 3 – Numerically Summarizing Data

3.1 Measures of Central Tendency

3.2 Measures of Dispersion

3.4 Measures of Position and Outliers

3.5 The Five-Number Summary and Boxplots

Chapter 4 – Describing the Relation between Two Variables

 4.1 Scatter Diagrams and Correlation

 4.2 Least Squares Regression

 4.3 The Coefficient of Determination (Optional)

Chapter 5 – Probability

 5.1 Probability Rules

 5.2 The Addition Rule and Complements

 5.3 Independence and the Multiplication Rule

 5.4 Conditional Probability and the General Multiplication Rule

 5.5 Counting Techniques

Chapter 6 - Discrete Probability Distributions

 6.1 Discrete Random Variables

 6.2 The Binomial Probability Distribution

Chapter 7 – The Normal Probability Distribution

 7.1 Properties of the Normal Distribution

 7.2 Applications of the Normal Distribution

 7.3 Assessing Normality (Optional)

 7.4 The Normal Approximation to the Binomial Probability Distribution

\*Only: Determine whether the normal distribution can be used to approximate the binomial distribution

Chapter 8 – Sampling Distributions

 8.1 Distribution of the Sample Mean

 8.2 Distribution of the Sample Proportion

\*Only: Introduction of sample proportion necessary for confidence intervals

Chapter 9 – Estimating the Value of a Parameter

 9.1 Estimating a Population Proportion

 9.2 Estimating a Population Mean

Chapter 10 – Hypothesis Tests Regarding a Parameter

10.1 The Language of Hypothesis Testing

10.2 Hypothesis Tests for a Population Proportion (Optional)

10.3 Hypothesis Tests for a Population Mean