

**Course Number: MATH 22 | Statistics**  
**Spring/Summer/Fall A/B 20XX**  
**X Hours**



**INSTRUCTOR INFORMATION**

Instructor: Steven Daniel Harris, M.Ed., ABD Professional Instructor of Mathematics  
Email: SHarris@Walsh.edu  
Phone: 330-209-7037 (cell)  
Virtual Office Hours:

**COURSE DESCRIPTION**

Course Description: Elementary theory of probability and statistics, frequency distributions, binomial distributions, normal distributions, means, variances, standard deviations, sampling, confidence intervals, testing of hypotheses, applications drawn from real world situations. We will also be introduced to basic linear regression and the Analysis of Variance(ANOVA)

**Course Prerequisites:** Math 104 or equivalent

**PROGRAM STUDENT LEARNING OUTCOMES (PSLOS)**

- The student will identify and apply the different ways to sample from a population
- The student will identify the appropriate level of measurement
- The student will identify the center, spread, skew, and kurtosis of the data, be that normal distribution or another distribution
- The student will be able to calculate probability via the use of combinatoric numbers.
- The student will be able to conduct hypotheses testing, as an extension of basic decision theory.
- The student will be able to test differences between two means, 2 proportions, and 2 variances.
- The student will be able to conduct basic regression and correlation as well as utilize the Analysis of Variance (ANOVA) to test pairwise differences between 3 or more means.

**COURSE STUDENT LEARNING OUTCOMES (CSLOS)**

**Upon completion of this course, students will be able to:**

- sample from a population in several different ways.
- will identify the highest levels of measurement deserving a given variable.
- calculate the four moments in any distribution: Center, Spread, Skew, and Kurtosis.
- calculate probability via the use of combinatoric numbers.
- convert raw score to normal score, and conversely.
- conduct hypothesis testing for means, variances and proportions, as an extension of decision theory.
- conduct basic linear regression, correlation, and the analysis of variance (ANOVA).

## REQUIRED COURSE MATERIALS

Bluman, M.G., . (2014) ELEMENTARY STATISTICS: A STEP-BY-STEP INTRODUCTION. New York, NY. Mc-Graw-Hill Education. ISBN-B; 978-0073534985.

Students are responsible for all material discussed and assigned in class throughout the semester.

### Computer/Digital Literacy Requirements

To participate in the course, you will need access to a computer with a webcam, speakers, and internet connection, have the ability to navigate the Web, and have a working understanding of ECN. Students are expected to know how to use and check their Walsh University email on a daily basis. Familiarity with Zoom is highly recommended.

## STUDENT REQUIREMENTS AND EXPECTATIONS

### Attendance/Course Participation

It is an expectation in this course that all students complete the readings and other assignments, and actively contribute to all discussion topics. Many of the course activities are built upon collaborative learning and rely on the input and feedback of others. Because of the nature of online course work, late or missing activities may have a negative impact on the overall student learning and course performance.

Participation in this course is taken to mean sharing of self with others with respect to thoughts and feelings as well as engaging actively in the exercises and experiences that are a part of the teaching-learning design. There is also the expectation that contributions made should reflect a growing understanding of course topic(s). Students are required to reflect informed and articulate answers and thoughts based on careful readings and completion of assigned activities and materials.

### Netiquette

Netiquette refers to a set of informal rules that guide social behavior in cyberspace (email, discussion forums, assignments, and other interactions or collaborations).

- It is easy to offend people in cyberspace because information based on text only can be easily misunderstood. Please use a professional and respectful tone in communicating with fellow learners and the instructor in all interactions.
- Also, be careful to consider that the comments and information that you send into cyberspace will be archived for at least five years. If you make negative comments or social blunders, those comments may become public information.
- Use Standard English rather than popular online abbreviations and regional colloquialisms in both formal and informal written communication and be sure your spelling and grammar are correct.
- Video interactions should reflect a respectful tone in verbal communications and body language.

### Discussion Forum Participation

Participation in discussion forums is critical for maximizing students' learning experiences and is required for the online delivery of this course. Each student is required to be part of an online community who interact, through discussion, to enhance and support the professional development of the group.

Active participation in discussion topics is defined as making at least one (1) original posting per week for each discussion topic and at least two (2) responses to colleagues' postings. This will result in a minimum total of three (3) postings each week, per topic.

**NOTE: Your original post will be due each week by Wednesday at 11:55 p.m. and all subsequent posts will be due by Sunday at 11:55 p.m.**

The instructor will be reading all your contributions. If posts are satisfactory, the instructor might not be posting. For incomplete or incorrect posts, the instructor would highlight what is missing or what is wrong. The instructor would certainly highlight exceptional answers and would open the opportunity for further discussions and questions if the need arises.

The course discussion rubric provides specific guidelines on how discussion contributions will be graded and what is considered a substantive response. Some characteristics that are considered to be a part of excellent discussion

contributions are outlined below. The instructor will consider these characteristics when assessing students' quality and level of participation.

- Each student should submit his/her initial post(s) early in the session and your subsequent responses to the posts of other learners at timely intervals within the duration of the session. Keep in mind the goal is to have a dynamic discussion that lasts throughout the entire session.
- Posts and responses should be thorough, thoughtful and properly posted BEFORE the due dates for the week. Just posting an "I agree" or "Good ideas" will not be considered adequate. Support statements with examples, experiences, or references. However, students are encouraged to be brief – try to keep each post and response to one or two short paragraphs. Keep in mind that fellow students will be reading and responding too.
- Make certain to address the discussion prompt(s). This does not mean one should not extend the topic, but do not stray from the topic.
- Discussions occur when there is dialogue. Build upon the posts and responses of other learners to create discussion threads. Revisit the discussion forum and respond (if necessary) to what other learners have posted to initial responses.
- When relevant, add to the discussion by including prior knowledge, work experiences, references, websites, resources, etc. (giving credit when appropriate).
- Contributions to the discussions (posts and responses) should be complete and free of grammatical or structural errors.

### **Assignments**

All course written requirements should be submitted via the Assignments tool in ECN. Lessons will run Monday-Sunday of each course week. Lessons will open on the Friday prior to the start of a lesson. All assignments, other than discussion forum posts, should be completed and submitted by the last day of the lesson week (Sunday) at 11:55 p.m. Because of the way the course is structured, students must stay on track with assignment dates and cannot complete assignments from previous weeks once the due date is passed.

### **Computerized Web-Based Evaluations for Courses/Faculty**

Students will be given the opportunity to evaluate the course and faculty at the end of the semester. Students have a professional responsibility and obligation to complete these evaluations.

### **Instructor Feedback/Communication**

Please contact the instructor via Walsh email (see Page 1, Instructor Information) with any personal and/or private issues or questions."

I will be communicating with you via the Walsh email and Announcements tool in ECN. Please make sure to check this daily. I will not communicate with personal email addresses. If you send me an email from your personal account, I will reply to your Walsh account. I will be sending announcements every week with any relevant information you will need for the week and/or any summaries from the past week. Regarding discussions, I usually begin responding to discussion items after I have seen everybody respond once. The cycle of discussion units from initial posts to evaluations is approximately one week.

## **GRADING METHODOLOGY AND POLICIES**

Final course grade will be based on graded assignments, interactive participation, and demonstration of ethical and professional clinical conduct in all learning activities. You can expect approximately a one-week "turn-around" time in the grading of tests, and a 2-4 day period for me to grade homework problems and other assignments.

A grade will be assigned based upon achievement of points within one of the following ranges:

<b>Letter Grade</b>	<b>Percentage</b>
A	96% - 100%
A-	92% - 95.99%
B+	88% - 91.99%
B	81% - 87.99%
B-	78% - 80.99%

C+	76% – 77.99%	
C	72% – 75.99%	
C-	69% – 71.99%	
D+	66% – 68.99%	
D	62% – 65.99%	xx points
D-	60% – 61.99%	xx points
F	Below 59%	xx points

### Late Assignments

All assignments are due by the day indicated on the assignment. If accepted by the instructor, late submissions (via email, dropbox, etc.) will be assessed a penalty.

Make-up assignments will only be permissible under EXCEPTIONAL circumstances. It is the student’s responsibility to notify the instructor in-advance of the assignment. The instructor will evaluate each situation on a case-by-case basis. A request is not synonymous with approval. In some cases, the assignment will be due or examination taken prior to the original due-date.

All course assignments must be completed before a course grade will be issued. If not completed, an incomplete grade may be negotiated. Refer to Walsh University Catalog for incomplete grade protocol and policies.

### Grade Appeal

Refer to the Walsh University Catalog for the specific policy.

## COURSE POLICIES

Take good notes in class. Seek help the minute you fall behind. Come to class with a good attitude for me as well as your peers.

The professor as court reporter. What does this mean?? It means that if I hear a student threaten him/her self or others, I, the professor and court reporter MUST file a report with the Campus police.

A word about the student as consumer. Invariably in a college students academic trajectory, he/she runs into a professor that for some reason either can’t get along with the professor or doesn’t do as well on a particular professor’s exam matrix. If there is something that I am doing to prevent your learning, please let me know. I will not hold it against you. If there is something that I can change in the delivery of the material, I will do it. By coming to me directly to resolve a classroom issue will make you look mature and responsible. In direct contrast, if all you do to resolve an issue is to “go over my head” first without talking the issue out with me first might make you feel good, but in the long run will make you look petulant and weak, and trust me, the professor (any professor) will resent this approach.

### Submitting Electronic Files

All electronic files must be submitted in .doc, docx, .pdf format. If you do not have Microsoft Word, you can download Open Office Writer for free at <http://www.openoffice.org/>. This will allow you to open the instruction files, make changes, and save in .doc or .pdf. Please name your file using the following convention: YourName\_Lesson#Assignment#.doc. All assignments should be submitted into the “Assignments” section in ECN unless otherwise instructed.

## UNIVERSITY AND DEPARTMENTAL POLICIES

### Academic Integrity

Appropriate source documentation must be supplied for all quoted and/or referenced materials. If any student has specific questions about proper citations, quotations, etc., please contact the instructor.

The Walsh Digital Campus subscribes to the Academic Integrity Policy as published in the Walsh University Catalog (“Academic Integrity Policies & Procedures” section). If a student engages in academic dishonesty – as defined by the policy – the penalties may include an “F” for the assignment, an “F” for the course, and/or submission of the student’s

(or group's) name to the University for further action. The instructor will follow procedures set forth in handling issues of alleged violations. The student should become familiar with these policies, procedures, etc.

### **Accessibility Services for Students with Disabilities**

Walsh University is committed to fostering an institutional climate in which qualified students with disabilities have full access to the academic environment. It is our practice to create an inclusive and accessible learning environment consistent with federal law.

If you feel that you may need an accommodation based on the impact of a disability or temporary medical condition, please contact Meredith Sodik, the Director of Academic Support Services, at 330-490-7529 or [msodik@walsh.edu](mailto:msodik@walsh.edu). Accessibility Services will confidentially discuss your needs, review your documentation, and determine your eligibility for reasonable accommodations. Please know that it is the student's responsibility to request and coordinate accommodations. Although students may contact Accessibility Services at any point throughout the semester, it is ideal for a student's accommodations to be arranged and communicated as early as possible because accommodations are not retroactive.

### **University Administrative Withdrawal Policy**

After one written warning to the student, and with appropriate notice of such a practice in the syllabus, an instructor may administratively withdraw a student from a course after unexcused non-attendance in an on-ground course, or unexcused non-participation in an online course, in at least 20% of the specific course schedule per the following schedule:

- 8 week course – after two weeks
- 15 week course – after three weeks

The student must receive one written warning from the instructor to the student's Walsh University email address. Administrative withdrawals will not be permitted after the last day to withdraw from the term (per appropriate term of the Academic calendar) without permission of the Associate Vice President and Dean of Academic Administration and Department Chair of the program. Refer to the academic calendar for specific dates. A student who is administratively withdrawn from a class will receive a final grade of W (withdrawal).

## **STUDENT SUCCESS SUPPORT**

Sarah Shaffer  
Student Support Manager  
Phone: 330-490-7346  
Email: [sshaffer@walsh.edu](mailto:sshaffer@walsh.edu)

## **TECHNICAL SUPPORT**

Walsh University Help Desk  
Phone: 330-244-4357  
Email: [helpdesk@walsh.edu](mailto:helpdesk@walsh.edu)

## **COURSE ORGANIZATION AND TEACHING STRATEGIES**

This course is organized in alignment with Walsh University's online course template. Each lesson contains an overview and outcomes, readings and related materials, learning activities and assessments, as well as supplemental resources. The schedule below is tentative; all assignments, projects, grades, and due dates are subject to change through the course of the semester as needed at the instructor's discretion.

Weekly Topic(s)	Deliverables	Due Date
<p><b>Week 1</b> <b>Statistical Preliminaries</b></p>	<p>Read Bluman text p 3-17  Assignments:  Page 5: items 1-17.  Page 17: items 1-16  View the power point presentation on the highest level of measurement.  Assessment:  "Chapter Quiz" Bluman, page 36-37  Discussion</p>	<p>Sun</p>
<p><b>Week 2</b> <b>Moments of data: Centrality, Spread, Skew, and Kurtosis</b></p>	<p>Read Bluman 111-121; 128-143; 148-159; 168-172  Watch video "Measures of Central Tendency"  Assignments:  123: 1-12, 30, 31, 32, 35  143: 1-9, 30-34, 50, 51, 52  159: 1-17, 24, 25, 29, 30, and item 32  172: items 1-18  Assessment:  "Chapter Quiz". Page 4.2 181:1-15 only  Discussion</p>	<p>Sun</p>
<p><b>Week 3</b> <b>Calculating probability using well-established counting rules</b></p>	<p>Read section 4.1 of Bluman  Watch audio/visual on the basis of probability  Assignments:  198-199: 1-29, 30, 36, 47  206-207: 1-13, 17, 18, 31, 32  222-23: 1-18, 21; 226 items 54-55  235: 1-20; 46; 67  245:1-15  Assessment:  Lesson 3 Page 250: 1-50 all  Discussion</p>	<p>Sun</p>
<p><b>Week 4</b></p>	<p>Watch Video on the "Construction of the Geometric Distribution"  Read sections 5.1 and 5.2; 5.3; 5.4  Assignments:  272-273: 1-19  282-284: 1-32  298: 1-20, 27  Assessment:  Lesson 4 exam: 506: items 1-25  Discussion</p>	<p>Sun</p>
<p><b>Week 5</b> <b>Binomial Distribution and Normal distribution</b></p>	<p>Assignments:  322: 1-48, 51, 52, 57  337: 1-32  352: 1-20, 25  364: 1-32 all  Assessment:  Lesson 5 Exam...364: 1-32 all  Discussion</p>	<p>Sun</p>
<p><b>Week 6</b> <b>Introduction to hypothesis testing</b></p>	<p>Watch audiotape involving decision theory  Assignments:  426: 1-14  435: 1-10, 15, 21, 26  449: 1-10, 19, 20  457: 1-12, 22, 23  Assessment:  Lesson 6 exam: 483: 1-25 only  Discussion</p>	<p>Sun</p>

<p><b>Week 7</b>  <b>Testing hypotheses</b>  <b>involving 2 means and/or</b>  <b>2 variances</b></p>	<p>Assignments  494-496: 1-12, 26  503: 1-8, 21, 22  515: 1-10  524: 1-15  535: 1-12, 35  Assessment:  Lesson 7 exam. 542: 1-25 only  Discussion</p>	<p>Sun</p>
<p><b>Week 8</b>  <b>Correlation, Regression,</b>  <b>and simple One-Way</b>  <b>Analysis of Variance with</b>  <b>post-hoc tests.</b></p>	<p>Assignments:  561: 1-5, 27, 28  570: 1-20  653: 1-10  661: 1-13  Assessment:  Lesson 8 exam. 602: 1-17 and 680: 1-16  Discussion</p>	<p>Sun</p>

# APPENDICES

## Discussion Rubric

Criterion	Below Average	Average	Very Good	Excellent	Score*
<b>Quality of Information in Posting</b>	Posting simply restates the main concept.	Postings consistently focus on the week's topic, but do not relate the underlying concepts in the readings to the discussion. No details and/or examples are given.	Postings consistently focus on the week's topic and relate the underlying concepts in the readings to the discussion. Provides at least 1 supporting detail or example.	Postings consistently focus on the week's topic and relate the underlying concepts in the readings to the discussion. Comments including several supporting and details and/or examples.	
<b>Citations and Resource Development</b>	Never cites sources and /or does not provide information regarding outside resources related to the topic.	Rarely cites sources or provides information regarding outside resources related to the topic.	Occasionally cites sources or provides information regarding outside resources related to the topic.	Consistently cites sources used to develop posting and provides information regarding outside resources related to the topic.	
<b>Critical Thinking</b>	Does not identify and summarize the problem, is confused or identifies a different or inappropriate problem	Identifies the main problem and subsidiary, embedded, or implicit aspects of the problem	Identifies not only the basics of the issue, but recognizes nuances of the issue	Provides exemplary insights, engages other opposing postings, and draws support from experience and information not available from assigned sources	
<b>Participation</b>	A post own comments but does not interact with others in the online community.	Rarely interacts or responds to other members of the online community other than required responses.	Occasionally responds to other members of the online community over the required minimum number of postings.	Consistently encourages and facilitates interaction among members of the online community on an ongoing basis over the required minimum number of postings.	
<b>Total Score:</b>					
<b>(May be recorded in decimals or fractions)</b>					