

STATISTICS MAT 4514 FALL 2026

Dual Credit with BSU MATH 181

Mr. Asante

Office: Wagoner 151

Email: jgasante@bsu.edu

Telephone: 765-285-7401

Office Hours:

Tuesday: 10:00 am – 12:00 pm, 1:00 pm – 3:00 pm

**Also by appointment*

If my door is open feel free to stop in!

Thursday: 10:00 am – 12:00 pm, 1:00 pm – 3:00 pm

Text: *Intro Stats* (fourth edition); by DeVeaux, Velleman, and Bock; Pearson

Also Required: TI – 83 Plus or TI – 84 or higher calculator, or equivalent

Prerequisites: Advanced Algebra and Trigonometry (MAT 3001 and 3002), or appropriate score on the SAT/ACT, appropriate scores on the mathematics placement tests, or permission of the department chairperson.

COURSE OVERVIEW:

This course covers and guides students through discovering statistical concepts, exploring statistical principles, and applying statistical techniques. The course focuses on developing statistical reasoning through the analysis of genuine data. The students will learn to describe the distribution of a variable, compare the distributions of two or more variables, and describe the relationship between two variables. The course introduces the issues of sampling, surveys, and experiments. Probability is introduced through simulations and these simulations build an understanding of the Central Limit Theorem. Inferences from data include confidence intervals and significance tests for a proportion, a mean, the difference between two proportions, the difference between two means, both for matched pair designs and independent samples, and differences in distributions. Exploratory data analysis, data production issues, and interpretation of results by the students are emphasized throughout.

ATTENDANCE POLICY:

Attendance is mandatory. Students may receive excused absences at the professional discretion of the school nurse, the associate director of mental health services, the associate director of college counseling and student engagement, the director of academic affairs, and the executive director of the Indiana Academy. Unexcused absences occur when students miss class without prior approval from the aforementioned designated school officials. Continued absences (both excused and unexcused) from Academy classes increase the likelihood of unsuccessful completion.

Alongside steady attendance, students are expected to maintain consistent healthy habits of decorum, respect, and kindness towards their classmates, instructors, and teaching assistants. When students fail to meet these classroom behavioral standards and academic habits, it is the expectation faculty engage appropriately to bring quick and immediate resolution. When students consistently fail to meet these behavioral standards and academic habits in the classroom, administrative action will be taken involving, but not limited to, parent/guardian communication, removal of privileges, administrative withdrawal from the classroom, suspension, and expulsion.

You are required to attend every class session, in accordance with Indiana Academy attendance policies. I understand clocks can be a minute or two off, so I will grant leniency for the first one or two minutes of class, but **after 15 minutes you are officially “Absent.”** However, class time is very valuable, so I strongly encourage you to get to class no matter how late you may be. This will make your process of learning what was covered in class that day much easier. Sleeping in class will result in an unexcused absence without notice.

ABSENCE POLICY:

It is the policy of the Indiana Academy that any absence from class is unexcused, except for illness, death in the family, college or school-related activities, and extenuating circumstances. When a student is absent from a class, the instructor reports the student absence to the Faculty Attendance Coordinator in the Office of Academic Affairs. Unless the absence is excused by a school official, it is considered unexcused. The decision as to whether an absence is excused is not determined by the instructor. Four or more unexcused absences in my class will lead to academic and residential

consequences to be determined by the Office of Academic Affairs and the Office of Residential Life that may include detention, residential groundings, parent/principal conference, among others.

EVALUATION:

In this course you will be given a homework assignment every chapter, periodic quizzes, and an exam after every unit. The homework assignments are due the following class day, as listed on the course assignment schedule. The quizzes will generally take about 20 minutes and be worth 20 points each. The exams are not cumulative in the sense that you will not see questions directly from previous units, but statistics especially is a cumulative discipline so you will need to apply knowledge from previous units to help solve new problems. The due date for the projects will be communicated. The final exam will take place on the Final Exam Period, December 14 – 17, 2026.

GRADING SCHEME:

Your grade in this course will be determined by the following percentage values.

Activities – 10%
Projects – 10%
Homework – 20%
Quizzes – 20%
Exams – 20%
Final Exam – 20%

Letter grades are determined by the following scale:

93-100	A
90-92	A-
87-89	B+
83-86	B
80-82	B-
77-79	C+
73-76	C
70-72	C-
69 and below	D*

MAKE-UP WORK POLICY:

Since some of the work will be done outside the classroom or in groups, late work should not be much of an issue. If you and/or your group need an extension you must contact me as early in advance of the deadline as you can to arrange that. If you will be missing a quiz or an exam you must contact me as soon as you know you will be missing it and schedule a time for you to take the quiz or exam. **In the event of an unexcused absence or suspension, missed homework assignments, quizzes, exams, etc. will NOT be accepted for credit** (except when missed work would fail the student). Make-up quizzes, exams, etc. generally are not taken during class time.

OTHER POLICIES:

- Laptops/tablets/other internet devices will be helpful in class for some activities and simulations. When you use your laptop, please keep the volume turned off, and use it exclusively for class related things. This means no email, Facebook, Twitter, games, etc. While on the device in class do not hide toolbars; keep all items you are working on visible on the screen and available for teacher inspection. Keep the internet device turned off and closed during tests and quizzes. You are expected to bring your graphing calculator to class EVERY DAY, it will be absolutely necessary.
- Any and all work on homework assignments, exams, quizzes, and projects MUST be your own!

ACADEMIC INTEGRITY:

I support and abide by the academic integrity policy as set forth in the Student Handbook. While you are encouraged to work together in this course often, here are a few examples of behavior subject to review under the Academic Integrity policy:

- Copying someone's work and turning it in as one's own.
- The use of aids or other materials on quizzes and exams without expressed permission.
- The use of calculators when explicitly asked not to do so.
- Copying another person's work or answers on a quiz or exam.
- Giving information about the content of quizzes or exams to students yet to take the exam or solicitation of such information is a severe violation of academic honesty standards.

ARTIFICIAL INTELLIGENCE POLICY:

- Artificial intelligence (AI) provides exciting new tools for academic work.
- It is appropriate to use AI to explore solutions and to discover methods of approaching problems in homework situations. In such cases, AI should be a learning tool that increases and supports understanding.
- AI also poses significant dangers for academic integrity. Passing off as your own any research, words, ideas, work, or solutions which you did not create is plagiarism. Whether the source is print, internet content, or generated by AI, copying work from outside resources and presenting it as your original work is **NOT** allowed. Use of AI should be documented.
- In quiz or exam situations, calculators or other materials can be used unless the instructor expressly communicates that such aides are not allowed on that section of a quiz or exam.

IA WIRELESS DEVICE POLICY:

Per Indiana Code 20-26-5-40.7, each school corporation must adopt and implement a wireless communication device policy that:

- Prohibits a student from using a wireless communication device unless directed by the classroom teacher for educational purposes only.

If required for participation in classroom instruction, a teacher may direct students to use only laptops or tablets. Cellphones, gaming devices, and smartwatches may not be used and must always be stored in a residential room, locker, backpack, or cellphone holders in the classroom. Students are prohibited from using any wireless communication device in the hallways, bathrooms, and all other locations inside the instructional building unless directly instructed to by a teacher. Students violating this policy may have their phone taken by a Burriss or Indiana Academy school official for the remainder of the day. Phones can be picked up from the school office at the end of the instructional day. Repeated violations of this policy will result in further consequences as outlined in the Student Handbook. This policy does not apply to the residential hall (Wagoner/Elliott) except when a teacher temporarily holds a class session in a location other than the Burriss Laboratory building. This policy does not apply to Ball State University courses or other Ball State University buildings.

BALL STATE UNIVERSITY BENEFICENCE PLEDGE:

Ball State University aspires to be a university that attracts and retains outstanding faculty, staff, and students. Ball State is committed to ensuring that all members of the campus community are welcome through our practice of valuing the varied experiences and worldviews of the people whom we serve. We promote a culture of respect and civil discourse as evident in our Beneficence Pledge. As a reflection of Ball State's commitment to respect, civil discourse, and the Beneficence Pledge, inclusiveness at the Indiana Academy emerges as one of the priorities of our living and learning community. We strive to exist together respectfully and compassionately, creating an environment where every member can thrive.

COURSE SCHEDULE FOR STATISTICS (MAT 4514)

08/10	Syllabus Chpt1 CAOS Pre-test	Chpt2	Chpt2 Quiz 1
08/17	Chpt3	Chpt3 4 Quiz 2	Chpt5
08/24	Chpt5 Quiz 3	Exam Review	Exam 1
08/31	Chpt6	Chpt7	Project 1 / Shadow Day
09/07	Labor Day	Chpt8	Exam Review Quiz 4
09/14	Exam 2	Chpt9 10 Project 2	Chpt11 Quiz 5
09/21	Exam Review	Exam 3	Chpt12
09/28	Chpt13	Chpt13 Quiz 6	Chpt14
10/05	Chpt14 Quiz 7	Chpt15	Chpt15 PTC's
10/12	Fall Break	Fall Break	Fall Break
10/19	Exam Review	Exam 4	Chpt16
10/26	Chpt16 Quiz 8	Chpt17	Chpt17
11/02	Chpt18	Chpt18 Quiz 9	Chpt19
11/09	Chpt19 Project 3	Exam Review	Exam 5
11/16	Chpt20	Chpt20 Quiz 10	Chpt21
11/23	Chpt21 Quiz 11	Thanksgiving Break	Thanksgiving Break
11/30	Chpt22	Chpt22 Quiz 12	CAOS Post-test
12/07	Final Exam Review	Final Exam Review	Final Exam Review
12/14	Final Exam	Final Exam	

*The teacher reserves the right to change this syllabus as situations arise,
or add to it as needed.*

CHAPTER	CONTENT
1	Stats Starts Here
2	Displaying and Describing Categorical Data
3	Displaying and Summarizing Quantitative Data
4	Understanding and Comparing Distributions
5	The Standard Deviation as a Ruler and the Normal Model
6	Scatterplots, Association, and Correlation
7	Linear Regression
8	Regression Wisdom
9	Understanding Randomness
10	Sample Surveys
11	Experiments and Observational Studies
12	From Randomness to Probability
13	Probability Rules
14	Random Variables and Probability Models
15	Sampling Distribution Models
16	Confidence Intervals for Proportions
17	Testing Hypotheses About Proportions
18	Inferences About Means
19	More About Tests and Intervals
20	Comparing Groups
21	Paired Samples and Blocks
22	Comparing Counts