

Advanced Statistics MAT 4825

Dual Credit with BSU MATH 221

Mr. Asante

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Office Hours:

Monday: 4:00 pm – 5:00 pm

Tuesday: 12:00 pm – 3:00 pm

Wednesday: 4:00 pm – 5:00 pm

Thursday: 11:00 am – 4:00pm

Friday: 4:00 pm – 5:00 pm

**Also by appointment*

If my door is open feel free to stop in!

Required materials:

Textbook: *Stats: Modeling the World* by Bock, Velleman, and De Veaux. Fourth edition. Pearson Education, Inc., 2015. ISBN 978-0-321-85401-8

Calculator: Graphing calculator with statistical test capabilities, like Casio FX-9750GIII, TI-84, or comparable.

Course objectives:

This course covers the objectives of the Advanced Placement Statistics examination. The topics are broadly organized into exploring data, obtaining data (experiments and surveys), probability, and statistical inference.

Outline of content:

I. Exploring data.

Describing and comparing distributions, Normal distributions as models or data, describing the relationship between two quantitative variables, predicting one quantitative variable from another, linear and nonlinear models of relationships, relationships between two categorical variables.

II. Gathering data.

Samples, surveys, experiments.

III. Probability

Simulations, randomness, probability models, random variables, binomial distributions, geometric distributions, sampling distributions, central limit theorem.

IV. Statistical inference

Confidence intervals, significance tests, inference for the mean of a population, comparing two means (independent samples and matched pairs), inference for a population proportion, comparing two proportions, test for goodness of fit, test for homogeneity of proportions, test for independence, inference about a regression model, inference about prediction, checking regression assumptions.

Attendance:

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 2 minutes of class, but at 3 or more minutes you are officially “Tardy” and after 10 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.

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 any particular class a student takes 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 night, 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, over material covered the previous week. The exams are not cumulative in the sense that you will 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. There will also be a final project and poster presentation as well as a final exam. The due date for the project and presentation will be communicated but it will be before May 5 – 9, 2025, and the final exam will take place on the Final Exam Period, May 5 – 9, 2025. Additionally, the AP Statistics national exam is May 8, 2025, and is cumulative. For dates of exam please refer to the most recent version of the course schedule. All tests and quizzes use AP Statistics question formats.

Grading Scheme:

Your grade in this course will be determined by the following percentage values. Remember that you EARN your grade, I do not give them out, so if you want a better grade be proactive about getting more help, there are many resources available to you!

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:

NO LATE WORK WILL BE ACCEPTED. 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 test you must contact me as soon as you know you will be missing it and schedule a time for you to take the test with me. **In the event of an unexcused absence, missed homework assignments, quizzes, tests, 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/cell phones/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 tests, 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

Academic dishonesty in any form will not be tolerated. The student is responsible for knowing the policies and consequences as stated in the Academy handbook. For this course, students should be aware of the following ways in which these policies specifically apply:

- Cooperative group work on homework assignments is appropriate and is encouraged, but simple copying of an assignment from another or allowing another to copy your homework without collaboration is not acceptable.
- 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.
- Giving information about the content of quizzes or tests to students yet to take the exam or solicitation of such information is a severe violation of academic honesty standards.
- In quiz or test situations, calculators or other materials should not be used unless the instructor expressly communicates that such aides are allowed on that section of a quiz or test.

IA Wireless Device Draft Policy

Pursuant to Indiana Code 20-26-5-40.7, The Indiana Academy for Science, Mathematics, and Humanities prohibits student use of wireless communication devices for non-instructional purposes in the classroom. As such, any and all portable wireless devices, that have the capability to provide voice, messaging, or other data communication between two or more parties, must only be used for academic purposes directly tied to the classroom activity or related educational task. Exceptions to this wireless device policy are eligible through academic accommodations, individualized education programs, or with instructor approval permitting the use of a wireless device for justification related to health, safety, and/or well-being. The improper use of a wireless device in an active classroom setting is subject to disciplinary action including but not limited to; a verbal warning, temporary seizure of said device by a school official, an unexcused absence for the class in question, written communication to parent/guardian, among other elevated consequences for repeated improper use.

Inclusive Excellence Statement

Ball State University aspires to be a university that attracts and retains a diverse faculty, staff and student body. We are committed to ensuring that all members of the community are welcome through valuing the various experiences and worldviews represented at Ball State and among those we serve. We promote a culture of respect and civil discourse as expressed in our Beneficence Pledge. As a reflection of Ball State's commitment to respect, civil discourse, and the Beneficence Pledge, Inclusive Excellence 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. Unfortunately, there might be occasions when something occurs that disrupts our progress toward meeting these objectives. In this case, we encourage any member of the Academy community to file a Campus Climate Report (CCR) https://bsu.qualtrics.com/jfe/form/SV_6mbRbL5acAntUTI. All reports will be taken seriously, and appropriate responses will be carried out by Academy administration.

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

COURSE SCHEDULE FOR STATISTICS (MAT 4825)

01/06	Syllabus / Chpt1	Chpt2	Chpt3	Chpt4 / Quiz 1
01/13	Chpt5	Chpt6	Exam Review	Exam 1
01/20	<i>MLK Day</i>	Chpt7	Chpt8	Chpt9 / Quiz 2
01/27	Chpt10	Exam Review	Exam 2	Chpt11
02/03	<i>Extended Weekend</i>	Chpt11	Chpt12	Chpt12 / Quiz 3
02/10	Chpt13	Chpt13	Exam Review	Exam 3
02/17	Chpt14	Chpt15	Chpt15	Chpt16
02/24	Chpt16 / Quiz 4	Chpt17	Exam Review	Exam 4
03/03	<i>Spring Break</i>	<i>Spring Break</i>	<i>Spring Break</i>	<i>Spring Break</i>
03/10	Chpt18	Chpt18	Chpt19	Chpt19 / Quiz 5
03/17	Chpt20	Chpt20	Chpt21	Chpt21
03/24	Chpt21 / Quiz 6	Chpt22	Chpt22	Chpt22
03/31	Exam Review	Exam 5	Chpt23	Chpt23
04/07	Chpt24	Chpt24 / Quiz 7	Chpt25	Chpt25
04/14	Exam Review	Exam 6	Chpt26	Chpt26
04/21	<i>Extended Weekend</i>	<i>Final Exam Review</i>	<i>Final Exam Review</i>	<i>Final Exam Review</i>
04/28	<i>Final Exam Review</i>	<i>Final Exam Review</i>	<i>Final Exam Review</i>	<i>Final Exam Review</i>
05/05	<i>Final Exam</i>	<i>Final Exam</i>	<i>Final Exam</i>	<i>Final Exam</i>