DEPARTMENT OF MATHEMATICS AND STATISTICS

**STA 215 INTRODUCTION TO STATISTICAL REASONING CRN XXXXX 3 credit hours**

**Meeting Days/Time Modality (In-Person, Online Asynchronous, etc.)**

**Fall 2022** **Syllabus**

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| **Instructor Information** |  |
| **Welcome** | Welcome to STA 215! This valuable course will provide you with the skills you need to evaluate statistical information found online and in the news, analyze data in research methods courses in your major, and interpret statistical reports on the job someday. |
| **Prerequisite/**  **Corequisite** | Satisfaction of English and reading academic readiness indicators\* and either satisfaction of mathematics academic readiness indicators\* or concurrent enrollment in STA 215P. \*The list of indicators for meeting academic readiness standards is found in Section Five of this catalog. |
| **Catalog Course Description** | Introduction to descriptive statistics, normal distributions, correlation and linear regression, sampling, experiments, chance phenomena, one- and two-sample estimation and hypothesis testing, chi-square tests, and use of statistical software. |
| **Warning** | Many students are required to take STA 270. Students should make sure that STA 215 is appropriate for their majors. |
| **Required Materials** | **(1) MyLab Statistics:** MyLab Statistics is an online homework system which also includes an electronic copy of the textbook. MyLab Statistics is covered by EKU’s BookSmart Program and can be accessed via Blackboard. MyLab Statistics also provides access to the online textbook for the course.  **(2) Calculator:** A scientific calculator with two-variable statistical functions. The instructor will use a TI-84. For quizzes and exams, students are permitted to use one of the following calculators: TI-83, TI-84, TI-85, TI-86, TI-89, or any non-graphing scientific calculator. Exceptions must be approved by the instructor. The use of a TI-84 is recommended.  **(3) Text (optional):** *Statistics: The Art and Science of Learning from Data*, 5th Edition, by Alan Agresti, Christine A. Franklin, and Bernhard Klingenberg, 2021. Students may choose to use the electronic copy of the textbook that comes with MyLab Statistics. |
| **General Education Goals and the Course** | Students will be able to . . .   * Use appropriate methods of critical thinking and quantitative reasoning to examine issues and to identify solutions (General Education Goal 2). * Distinguish the methods that underlie the search for knowledge in the arts, humanities, natural sciences, history, and social and behavioral sciences (General Education Goal 7). * Integrate knowledge that will deepen their understanding of, and will inform their own choices about, issues of personal and public importance (General Education Goal 8).   In particular, the General Education Objectives for achieving Goal 2 include the following:   1. Using mathematical methods to state and solve quantitative problems, including those stated in verbal form. 2. Using numerical and graphical data to make reasonable and valid conclusions. 3. Applying mathematical methods to real-life problems. |
| **Student Learning Outcomes** | Students who successfully complete STA 215 will demonstrate the ability to . . .   1. Describe data sets using graphs and numerical summaries. 2. Use normal distributions to model real-life situations. 3. Interpret regression and correlation results. 4. Use a regression equation to make predictions. 5. Describe appropriate ways of collecting data. 6. Apply basic rules of probability. 7. Solve problems that require the use of the Central Limit Theorem. 8. Compute and interpret confidence intervals. 9. Conduct tests of hypotheses and draw relevant conclusions. 10. Interpret output from a software analysis package. |
| **Tentative Course Outline** | Chapter 1: Statistics: The Art and Science of Learning from Data—1 day  Chapter 2: Exploring Data with Graphs and Numerical Summaries—2 ½ days  Chapter 3: Association: Contingency, Correlation, and Regression—3 days  Chapter 4: Gathering Data—2 days  Statistics and Data Integrity—½ day (as time allows)  Chapter 5: Probability in Our Daily Lives—1 day  Chapter 6: Probability Distributions—2 days  Chapter 7: Sampling Distributions—2 ½ days  Chapter 8: Statistical Inference: Confidence Intervals—3 days  Chapter 9: Statistical Inference: Significance Tests About Hypotheses—3 ½ days  Chapter 10: Comparing Two Groups—3 days  Chapter 11: Analyzing the Association Between Categorical Variables—1 day (as time allows) |
| **Inclement Weather Plan** | During inclement weather conditions, our class may temporarily transition to virtual instruction. Be sure to check our course Blackboard site and your email for instructions during inclement weather days. Please check the University homepage, [www.eku.edu](http://www.eku.edu), for announcements and instructions about inclement weather conditions. All updates on the status of classes will be provided no later than 7:00 a.m. each morning. |
| **Homework** |  |
| **Note** | It is expected that each student will spend on the average a minimum of two hours outside study for each hour of class time. |
| **Attendance Policy** | Success in understanding statistics is closely related to regular class participation. Students should make every effort to attend every class, whether online or in person. An acceptable excuse is an illness (including self-isolation or quarantine), a University provided excuse, or an emergency resulting in unavoidable absence. Students will not receive a grade penalty for missing class due to self-isolation or quarantine but should notify the instructor as soon as they are aware of the need to miss class. Students are expected to make up missed work and will be held responsible for announcements made in class. |
| **Student Progress** | Mid-term grades should be viewable in myEKU on Tuesday, October 4, 2022. |
| **Add/Drop**  **Withdrawal** | * Last day to drop this class with no tuition charge and no record of the course on the transcript: Sunday, August 21, 2022. * Last day to withdraw from this course with no withdrawal fee: Monday, October 10, 2022. After that, students withdrawing from the class may incur a $150 fee. * Last day to withdraw from this class: Sunday, November 6, 2022. * For additional information, consult the Colonel's Compass: <https://colonelscompass.eku.edu/fall-2022-deadlines-adddrop-refunds>. |
| **Make-Up Policy** | While students should make every effort to complete quizzes and exams at the regularly scheduled times, students are encouraged to stay home when they feel ill. An acceptable excuse is an illness (including self-isolation or quarantine), a University provided excuse, or an emergency resulting in unavoidable absence. Arrangements to make up a missed quiz or exam should be made within one week of the quiz or exam if possible. |
| **Tutoring Center** | The Mathematics and Statistics Tutoring Center is located in Wallace 342. This service is provided free of charge by the Department of Mathematics and Statistics. In-person tutoring is available either with an appointment or as a walk-in. Appointments are required for online assistance. More details can be found by visiting [www.mathtutor.eku.edu](https://nam02.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.mathtutor.eku.edu%2F&data=04%7C01%7CJean.Arthur%40EKU.EDU%7Ce49b7ea4b4a74bb8c8c508d94ad2373f%7Ce23043271af04dee83fbc1b2fd6db0bb%7C0%7C0%7C637623088987827485%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=mN%2BrGqxdo8JREzr3K1FR8BNJFY%2B7mxUrpPS6yRKf7uU%3D&reserved=0), calling (859) 622-6508, or emailing [mathtutor@eku.edu](mailto:mathtutor@eku.edu). The staff will help students to complete homework, improve study skills, decrease mathematics anxiety, and prepare for exams. Students are encouraged to take advantage of this facility. Hours, locations, and phone numbers for additional tutoring facilities on campus are found at [https://successcenter.eku.edu/tutoring](https://nam02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fsuccesscenter.eku.edu%2Ftutoring&data=04%7C01%7CJean.Arthur%40EKU.EDU%7Ce49b7ea4b4a74bb8c8c508d94ad2373f%7Ce23043271af04dee83fbc1b2fd6db0bb%7C0%7C0%7C637623088987837441%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=Hts0WXpsl5gglMuarNTpKlzcCy11%2FBxxIY5sic%2FtQLk%3D&reserved=0).​ |
| **The Student Success Center** | The Student Success Center, located on the ground floor of the library and online, provides free assistance for all EKU students. Students can request tutoring in over 150 subjects, as well as other services including mentoring, workshops, advising, studying, computer use, and with any questions related to your college experience. The Chellgren Success Series features workshops and video workshops to help with study skills, time management, stress management, and more. To make an online appointment or for more information, visit [www.successcenter.eku.edu](http://www.successcenter.eku.edu) or email [successcenter@eku.edu](mailto:successcenter@eku.edu). |
| **Mental/Physical Wellness Resources** | Eastern Kentucky University is committed to the wellbeing of all students.  Students dealing with feelings of sadness or hopelessness, thoughts of harm or suicide, or increased anxiety may utilize the resources below or, for **after-hours assistance**, contact:   |  |  | | --- | --- | | EKU Counseling Center After Hours Urgent Support Line: | (859) 622-1303 | | National Suicide Hotline: | (800) 273-8255  or dial 988 |   We encourage students to contact the following on-campus services for assistance regarding emotional and physical needs:   |  |  | | --- | --- | | EKU Student Health Services: [www.healthservices.eku.edu](http://www.healthservices.eku.edu) | (859) 622-1761 | | EKU Psychology Clinic: | (859) 622-2356 | | EKU Counseling Center: [www.counselingcenter.eku.edu](http://www.counselingcenter.eku.edu) | (859) 622-1303 | | EKU Women’s Health Clinic: | (859) 622-1761 | |
| **Further Assistance for Students** | Some of the following services are available 24/7.   * **Student Assistance Fund for Eastern:** <https://retentiongraduation.eku.edu/student-assistance-fund-eastern> * **Madison County Health Department:** (859) 623-7312 * **Ampersand Sexual Violence Resource Center of the Bluegrass:** 1-800-656-4673 * **Hope’s Wings Domestic Violence Program:** (859) 623-4095 * **EKU Police:** (859) 622-1111 * **Richmond City Police:** (859) 623-1162 * **Crisis Hotline:** 1-800-273-8255 * **Local Crisis Hotline:** 1-800-928-8000 * **Colonel’s Cupboard (Emergency Food):** (859) 622-3855 or [www.communityservice.eku.edu/Cupboard](http://www.communityservice.eku.edu/Cupboard) |
| **Student Technology Support** | EKU’s IT Geeks can assist with your technology questions. They are available for questions and equipment checkout in the Crabbe Library Atrium, or contact the Geeks using any of the following:   * Phone: 1-859-622-GEEK (4335) * Email: [geeks@eku.edu](mailto:geeks@eku.edu) * Social: @EKUGeeks * Website: <https://geeks.eku.edu/> |
| **University Policies and Syllabus Statements** | University syllabus statements on accessibility, accommodation, academic integrity, discrimination and harassment, and student rights under Title IX, as well as links to related university policies, can all be found at <https://academicaffairs.eku.edu/syllabi>. Mental/physical wellness information can also be found at this link. |
| **Course Requirements and Grading Policy** | Date and Time of Final Exam:  The grading scale for the course is   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | % | < 60 | 60-69 | 70-79 | 80-89 | 90-100 | | Grade | F or FN | D | C | B | A | |
| **Academic Honesty and Responsibility** | 1. Anyone violating the usual standards for academic honesty, for example, anyone attempting to obtain or exchange information regarding any quiz or test, or anyone using a fraudulent excuse to qualify for a make-up, may receive a course grade of F. Cheating includes buying, selling, or otherwise fraudulently obtaining copies of examinations or assignments for the purpose of improving one’s academic standing. During examinations it includes receiving information from other students or other students’ exams and referring to unauthorized notes or other written information in any form including electronic (e.g., information stored in graphing calculators). 2. Copying or working together **is not** acceptable for computer assignments. If you are caught copying or working together, you will definitely get a zero for the assignment, and you may get an F for the course. This includes the person who allows another person to copy his or her assignment as well as the person who copied, or all students working together. Working together includes, but is not limited to, discussing wording of an answer, discussing any computations or numerical answers, etc. If you have **any** questions regarding a computer assignment, you should ask your instructor. **Do not ask other students for help.** 3. The following are **not permitted** for calculators that are to be used on quizzes or exams: enhancing the calculator’s abilities beyond the factory settings, uploading documents or downloading software onto the calculator, and saving course content to the calculator. 4. Anyone behaving in a disruptive manner or refusing to follow the usual standards for academic behavior may be barred from attending class and may receive a course grade of F. 5. Students are expected to solve problems independently, using the knowledge gained from course materials. This precludes the use of problem-solving services (including but not limited to Chegg or similar services), as well as collaborative work with other students unless specifically authorized by the instructor. If an instructor has not explicitly permitted the use of resources other than your knowledge, you should assume that it is not permitted. Please consult your instructor if you are unsure as to permitted resources and tools. |
| **Department Policies** | * During class, cell phones and other devices must be turned off or set to silent mode. Silencing a cell phone includes silencing the ringer, alarms, and notifications. Instructors may give exceptions to this rule. * During resource-limited activities (such as exams), students may not use the calculator function of any wireless device. This includes cell phones and smart watches. * Grades are not given out over the phone. They may be posted on Blackboard. * Any student enrolling in a multiple section course for which s/he has already received a grade of D, F, or W from the instructor who is teaching the section may change to a section taught by a different instructor by seeing the Chair of the Department of Mathematics and Statistics. This change must be completed by the end of the drop/add period. |
| **Official Email** | An official EKU email address is established for each registered student, each faculty member, and each staff member. All university communications sent via email will be sent to this EKU email address. |
| **COVID-19 Precautions** | The university’s response to COVID-19 is fluid and dynamic. Please refer to our website for the latest guidance and university protocols: <https://staywell.eku.edu/>. |