

INSTRUCTOR: Logan Axon

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OFFICE: 221 Herak

OFFICE HOURS: MWF 11-12, Tu 9-10 in the Math Lab and 10-11 in Herak 221

TEXTBOOK: *Freund's Mathematical Statistics* 7th or 8th ed. by Miller and Miller

WEB SITE: <http://web02.gonzaga.edu/faculty/axon/422>

Math 422 is the sequel to Math 421 and will build on that course to develop the theory of statistical inference. Although the class will involve proofs, the focus will shift somewhat to inferential reasoning (i.e. the interpretation of data) rather than deductive reasoning (i.e. proofs). Topics to be covered include sampling distributions, estimation, hypothesis tests, and regression. Additional topics may be covered based on student interest. The course will use the statistical software R.

GOALS: The core goal of the class is to learn how to use data to make inferences about the likelihood of events. Generally, the class will emphasize the interpretation and communication of ambiguous and uncertain information. Specifically, students will develop statistical estimators, calculate and interpret statistical data, apply hypothesis tests and interpret the results, and make appropriate predictions based on statistical data and/or regression curves.

GRADES: Grades will be based on exams (45%), homework (30%), worksheets (10%), and a final project (15%). There will be 2 exams during the semester (each worth 12.5%) as well as a final exam (worth 20%). Homework will be collected approximately weekly. The final project will involve the analysis of data and a written report of the procedures used, the results obtained, and the significance of those results. No extra credit will be given. Final grades will be assigned using the following rough scale (with + or – at the top and bottom of appropriate ranges):

Score	Grade
90-100	A
80-90	B
70-80	C
60-70	D
0-60	F

GUIDELINES FOR WRITTEN SOLUTIONS. Writers should strive for clarity and, usually, brevity. Start with a clear statement of the problem and, for complex problems, a summary of the important elements. Complex solutions or proofs should also include a brief summary of the main idea(s) of the solution before proceeding with a detailed exposition. Avoid introducing superfluous variables and be sure to specify what each variable is when it is introduced. Use actual English words (not just math) to make actual English sentences.

ATTENDANCE AND OTHER CLASS BUSINESS: Students are expected to attend all classes. Absences should be excused in advance or by a written, signed note from an authority. Excessive absences may result in the student receiving a grade of V. Students with disabilities should work with the DREAM office to make sure that all necessary accommodations are made. Any changes to these policies will be announced in class.

The College of Arts and Sciences has suggested that the following be included in all course syllabi. It is important and you should read it at least once.

HARASSMENT, DISCRIMINATION, AND SEXUAL MISCONDUCT: Consistent with its mission, Gonzaga seeks to assure all community members learn and work in a welcoming and inclusive environment. Title VII, Title IX and Gonzaga's policy prohibit harassment, discrimination and sexual misconduct. Gonzaga encourages anyone experiencing harassment, discrimination or sexual misconduct to talk to someone from the Campus and Local Resources list found in the Student Handbook about what happened so they can get the support they need and Gonzaga can respond appropriately. There are both confidential and non-confidential resources and reporting options available to you. Gonzaga is legally obligated to respond to reports of sexual misconduct, and therefore we cannot guarantee the confidentiality of a report, unless made to a confidential resource. Responses may vary from support services to formal investigations. As a faculty member, I am required to report incidents of sexual misconduct and thus cannot guarantee confidentiality. I must provide our Title IX coordinator with relevant details such as the names of those involved in the incident. For more information about policies and resources or reporting

options, please visit the following websites: <http://www.gonzaga.edu/eo> and <http://www.gonzaga.edu/titleix>.

NOTICE TO STUDENTS WITH DISABILITIES AND/OR MEDICAL CONDITIONS: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability/medical condition requiring an accommodation, please call 509-313-4134 or visit the Disability Resources, Education, and Access Management (DREAM) office (room 209 Foley Library).

ATTENDANCE: I follow the university's standard policy on absences: the maximum allowable absence is two class hours (100 minutes) for each class credit. For a three-credit class meeting three times a week, the maximum number of absences allowed is six. For a three-credit class meeting twice a week, the maximum number of absences allowed is four. The grade for excessive absences is "V", which has the same effect as "F" (Fail) and is counted in the GPA. See also "Class Attendance Policy" on page 68 of the University's online catalogue.

ACADEMIC HONESTY: Academic honesty is expected of all Gonzaga University students. Academic dishonesty includes, but is not limited to, cheating, plagiarism, and theft. Any student found guilty of academic dishonesty is subject to disciplinary action, which may include, but is not limited to, a failing grade for the test or assignment in question, a failing grade for the course, or a recommendation for dismissal from the University. See also "Academic Honesty" on page 67 of the University's online catalogue.

COURSE EVALUATION: At Gonzaga, we take teaching seriously, and we ask our students to evaluate their courses and instructors so that we can provide the best possible learning experience. In that spirit, we ask students to give us feedback on their classroom experience near the end of the semester. I will ask you to take a few minutes then to carry out course/instructor evaluation in class. Please know that I appreciate your participation in this process. This is a vital part of our efforts at Gonzaga to improve continually our teaching, our academic programs, and our entire educational effort.