Math 422 Mathematical Statistics   Spring 2014

Instructor: Logan Axon
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Office: 221 Herak
Office hours: M 10-11, Tu 9-10, W 3-4, in the Math Lab F 11-12, and by appointment
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 with some rigor. Although the class will involve proofs, the focus will shift somewhat to
inferential reasoning (i. e. the interpretation of data). 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 of the class is to learn how to use data to make inferences about the likelihood of events.
This includes the interpretation and evaluation of estimates (including confidence) and predictions. The
class will also develop skills in dealing with ambiguous or uncertain situations where there is no one correct
answer.

Grades: Grades will be based on exams (45%), homework (30%), worksheets (10%), and projects (15%).
There will be 2 exams during the semester (each worth 15%) as well as a final exam (worth 20%).
Homework will be collected approximately weekly. Projects 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:

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.