

UNIVERSITY OF OTTAWA
MAT 5191
(Carleton University Course Code: STAT 5501)
STATISTICAL INFERENCE
(JANUARY 12 - APRIL 14, 2015)

PLEASE KEEP THIS COURSE OUTLINE FOR FUTURE REFERENCE
THIS VERSION IS NOT FINAL YET. JUST POSTED FOR WEBSITE PURPOSES

Instructor: Pierre-Jérôme Bergeron
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Website: <http://uottawa.blackboard.com/>

Course hours: Monday-Wednesday 2:30PM - 4PM (KED B005)

Office hours: Tuesday: 10 AM - 12 PM (KED B07-C) or by appointment

Prerequisites: Officially, MAT 5190 (STAT 5600) or permission of instructor.

Textbook: Casella, G. and Berger, R.L. (2002) *Statistical Inference*. Second Edition. Duxbury Advanced Series.

References: Lehman, E. L. and Romano, Joseph P. (2005) *Testing of Statistical Hypotheses*. Third Edition. Springer.

Content: Confidence intervals and pivotals; Bayesian intervals; optimal tests and Neyman-Pearson theory; likelihood ratio and score tests; significance tests; goodness-of-fit tests; large sample theory and applications to maximum likelihood and robust estimation. Possibly other things if time permits...
A tentative weekly schedule can be found on the course webpage.

Course requirements: There will be three types of assessment in this course:

1. 4 written assignments consisting of solving problems similar to or directly from the textbook. The assignments and their due date will be posted on the course webpage. Solutions to each assignment will be posted on the course webpage immediately after the due date; hence late assignments are NOT accepted.
2. An in-class midterm written test (of 80 minutes) consisting of solving problems similar to those from the textbook. Books and notes are NOT permitted.

Date of the midterm test: Wednesday, February 11, 2015

3. A final written exam (of 180 minutes), consisting in solving problems similar to those from the textbook. Books and notes are NOT permitted. The date of the exam will be fixed by the Registrar between April 15 to April 28, 2015.

Also, the course webpage will be regularly updated with the latest news, documents and changes relating the class. Students should consult it frequently.

Evaluation: The final grade is evaluated as follows:

- A) If the grade of the final exam is less than 50%, then the final grade is F (failure).
- B) If the grade on the final exam is more than 50%, then the final grade is calculated as follows:
 - * Assignments: 15 %
 - * Midterm: 25 %
 - * Final exam: 60 %

Note 1: If the grade on the final exam is higher than on the midterm, or the midterm is missed due to illness (**medical certificate required**), the final exam will replace the midterm (i.e. the final exam will count for 85% of the final grade). Students **must** write the midterm exam. There will be no replacement for the assignments or the final exam.

Note 2: All final grades below 70% are failing grades for graduate students.

Teaching methods: The main teaching method used in this course is old-fashioned lecture. Students are encouraged to pay attention to the explanation, rather than copying fragments of it from the board. Their participation, by answering the questions asked by the instructor or by asking their own questions, is appreciated.

*ALL OF THE ABOVE ITEMS (EXCEPT FOR "EVALUATION") ARE
SUBJECT TO CHANGE! REMEMBER TO VISIT THE WEBSITE
FREQUENTLY*