MAT2379 A00 (Fall 2018)
Introduction to biostatistics

Professor : Gilles Lamothe
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Office : 585 King Edward (KED), Room B07-D (in September)
Office : STEM 547 (after the move)
Web : `http://aix1.uottawa.ca/~glamothe/BioStat.html`

Note:
The department of mathematics and statistics is scheduled to move to the STEM building in late September. We will notify you by email once the move has been completed. For the moment, we are still located at 585 King Edward.

Course Schedule: Monday 1 pm to to 2:20 pm MNT 202
Wednesday 11:30 pm to 12:50 pm MNT 202

Office Hours : Tuesday and Thursdays from 1 pm to 2:30 pm.
For your needs, I reserved some hours every week exclusively for your questions. Do not be shy, come and see me without an appointment, at my office. I can also see you outside of these hours, but then you have to book an appointment beforehand (by email).

Help Centre: The Department of Mathematics and Statistics provides you with a centre for help in statistics (room STEM 207) to help you with your introductory course in statistics. You do not need an appointment. It is strongly suggested to not wait until the day before a test or an assignment to consult the centre for help, as the centre could be very busy. Please consult their web page, `http://science.uottawa.ca/en/faculty-services/undergraduate-studies#MAT` for more information concerning the statistics help centre.

Official Description of the Course: Descriptive statistics using the software package `R`. A concise survey of probability. The normal distribution. The central limit theorem and statistical estimation illustrated via simulation. Hypothesis testing, the design of experiments, paired sampling, categorical data and regression. Examples from the biosciences are analyzed with the statistical software.

Prerequisites :
MAT1320 or MAT1330. The courses MAT2379, MAT1371, MAT1372, MAT1373, MAT2375, MAT2377, ADM2303, ECO3150, HSS2381, PSY2106 cannot be combined for credits. Previously the course code was MAT2378.

Textbook: Expect the Unexpected (A First Course in Biostatistics) (Second Edition). Authors: *Raluca Balan* and *Gilles Lamothe*. The professor will indicate the parts of textbook that correspond to the different sections of the course as the course progresses.

Internet Resources: There is a Brightspace site that you can access at the following address: `uottawa.brightspace.com`. Assignments and solutions are going to be posted in Brightspace. There is also Web page for this course: `http://aix1.uottawa.ca/~glamothe/BioStat.html` We will post regular updates on the Web page such as suggested exercises. We suggest that you visit the Web page at least once a week.

Studying and exercises: As with all of your other courses, the key to success in this course is to get to work from the beginning of the semester. This work takes generally two complementary forms: a regular review of your course notes (and the relevant sections of the textbook), and workout relevant exercises each week to deepen your understanding of the material covered in class.

Notes: We strongly advise you to take notes during the lecture. Then (preferably later in the same day), revise and supplement your notes with the help of the textbook. If possible, try to work out some suggested exercises. If you find that you have difficulty with a concept or some exercises, it is important to consult the teacher as soon as possible. To understand the concepts covered later in the semester, you must have a good understanding of concepts covered earlier. The more you wait, the more difficult will be your learning. It is also advised to read before the lecture to identify points that need to be clarified.

Exercises : Solving exercises regularly will serve two ends: 1) deepen your understanding of the material covered in class, and 2) indicate (in the case where you have difficulties solving many problems in a same section) the location where the material has not been well understood. In the second case, we suggest you go back to the relevant sections of your notes and/ or textbook to try to obtain

clarifications. If you still have difficulties, see the teacher as soon as possible.

Statistical Software: We will learn to use `R` for our statistical analyses. `R` is an open source programming language is is available for free, see `www.r-project.org`. Here is a video concerning downloading and installing `R`: `https://www.youtube.com/watch?v=7iuKrPS8fMM`

Assignments: There are four assignments scheduled for this course:

- **Assignment 1** Deadline: Before 3 pm on Friday, Sept. 21.
- **Assignment 2** Deadline: Before 3 pm on Friday, Oct. 12.
- **Assignment 3** Deadline: Before 3 pm on Friday, Nov. 9.
- **Assignment 4** Deadline: Before 3 pm on Friday, Nov. 23.

All assignments are due by 3 pm sharp (Math department (STEM) drop boxes). ONLY the hard copy of the assignments are accepted. You cannot submit your assignments by email. No late assignment will be accepted.
The drop box for the assignments will be open a few days before the deadline. Please do not wait until the last minute to submit your assignment. The boxes will be emptied immediately after the deadline (at 3:00 pm sharp).

Midterm: A closed book midterm will be held in class on **Monday, October 29**. A formula sheet will be provided at the midterm examination.

Final Exam: A closed book 3-hour exam will take place during the examination period (from Dec. 7 to Dec. 20) and will cover all the topics seen during the semester. A formula sheet will be provided. It is your responsibility to find out the date, place and time of the final exam - do not rely on your friend(s). An error on their part could cause you some problems. In addition, never write a test, especially a final exam, if you are sick. We cannot account for your sickness after the fact. Please consult the Faculty of Science regulations concerning exams: `http://science.uottawa.ca/en/students-etudiants/exams`

Only the following calculators are allowed during Faculty of Science examinations: Texas Instruments TI-30 and TI-34, Casio FX-260 and Casio FX-300 (scientific and non-programmable calculators).

Final Grade: We will compute your final grade as follows:

Assignments 20%; Test 25%; Final Exam 55%.

- Late assignments will **not** be accepted.
- The midterm can only be written on Monday, October 29. If you are unable to write the midterm on that date, we will transfer the weight of the midterm to the final exam.
- If you are unable to write the final exam, then the policies of the Faculty of Science will apply.
- If your mark on the final exam is better than the mark on your midterm, then we will compute your final grade as follows:

  Assignments 20%; Final Exam 80%.

Note that this syllabus is subject to modification. Modifications will be announced in class and/or on the website of the course.