

# STAT 2509B: Introduction to Statistical Modeling II, Winter 2020

**Instructor:** Song Cai

**Email:** [scai@math.carleton.ca](mailto:scai@math.carleton.ca)

**Phone:** 613-520-2600 x 2423

**Office:** 5215 Herzberg laboratories (HP)

**Hours, Locations and Webiste:**

**Lectures:** Tue. and Thu. 14:35–15:55 at 3380 Mackenzie Building

**Lab Tutorials:** all at 4385 Herzberg Laboratories (HP)

**B1** : Wed. 14:35–15:25;    **B2**: Fri. 09:35–10:25    **B3**: Mon. 14:35–15:25;

**B4** : Thu. 09:35–10:25;    **B5**: Tue. 08:35–09:25;    **B6**: Thu. 13:35–14:25.

**Office hours:** Tue. 13:00–14:00 at 5215 HP or by appointment

**Course website:** [cuLearn](#)

**Important Dates:**

**Tutorial starts from:** Jan. 13, 2020

**Winter break (no classes):** Feb. 17–21, 2020

**Last day to withdraw from the class:** Apr. 7, 2020

**Important dates and deadlines, 2019–2020:**

<https://carleton.ca/registrar/registration/dates-and-deadlines/>

**Textbooks:**

- (i) *Introduction to Probability and Statistics*, 13th edition (or 3rd Canadian edition), by William Mendenhall, Robert J. Beaver, and Barbara M. Beaver, Brooks/Cole
- (ii) *Learning SAS Version 8*, by Ann Woodside (Available at the Carleton Bookstore)

**Prerequisites:**

(i) STAT 2507 and (ii) Grade 12 Mathematics (Geometry and Discrete Math) or MATH 0107; or permission of the School. (If you are uncertain about your prerequisites, please check with the Undergraduate Advisor Mr. Gary Bazdel in 4302C HP).

**Grading Scheme:**

- Four (4) assignments: 5% each (20% in total)
- Two (2) in-class tests on Feb. 6 and Mar. 5th: 10% each (20% in total)
- Final exam (a three-hour closed book exam covering the whole course): 60%

**Additional notes about tests/exams:**

- You are allowed to use a non-programmable calculator for the tests and final exam.
- Cellphones and any other electronic devices with internet connections are strictly prohibited in the text and final exam.

**Important Grading Rules:**

- If your final exam mark is less than 40% you will receive an F, regardless of your term mark.
- In case of being absent from the final exam, if your term work is not satisfactory (i.e. less than 50%), you will receive an F.
- If your final exam mark is higher than your overall mark, you will receive a grade based solely on your final exam mark.
- You will receive 0 for each test you miss. Exception to this rule will be made only if you provide me with a proper documented reason (such as sickness verified by a physician), in which case the weight of that test will be shifted to the final exam. No makeup tests will be given in any case.
- Late submissions of assignments will not be accepted and a zero mark will be given in that case unless you can provide a documented reason (e.g., medical), in which case the weight of that assignment will be shifted to the other assignments.
- If you wish to see your final exam paper, you have to make an appointment within three weeks of the final exam.
- Your grade will not be changed in any case according to your special needs (such as scholarship, etc).

**Course Content:**

**Simple Linear Regression:** Method of Least Squares, Inference, Analysis of Variance (ANOVA), Correlation, Test for Lack of Fit and Residual Analysis, Data Transformation

**Multiple Linear Regression:** Method of Least Squares, Inference, ANOVA, Residual Analysis, Multicollinearity, Variable Selection Procedures

**Experimental Design:** Completely Randomized Design (CRD), Randomized Block Design (RBD), Multiple Comparisons, Non-parametric Tests

**Categorical Data Analysis:** Pearson's Chi-square Statistic; the Chi-square Test of Independence and Homogeneity

**Additional Notes:**

- Asking content-related questions by emails is not encouraged. You should always come to my office hour for such questions to avoid unnecessary confusions.
- When asking schedule-related or clarification questions by emails, you should expect a waiting time of 24 to 48 hours for me to process.
- If you want to make an appointment other than the regular office hours, you should expect a meeting at least one week after the date you make the appointment.

**Academic Integrity Policy:**

<http://carleton.ca/studentaffairs/academic-integrity/>

**Academic Accommodation:**

You may need special arrangements to meet your academic obligations during the term. For an accommodation request the processes are as follows:

**Pregnancy obligation:** write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details see the [Student Guide](#).

**Religious obligation:** write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details see the [Student Guide](#).

**Academic Accommodations for Students with Disabilities:** The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or [pmc@carleton.ca](mailto:pmc@carleton.ca) for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your Letter of Accommodation at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the [PMC website](#) for the deadline to request accommodations for the formally-scheduled exam (if applicable).