

Methods of Data Analysis 1

University of Toronto
Department of Statistical Sciences
STA302H1F Fall 2025

Course Meeting Times

Section	Modality	Time	Instructor
LEC0101/2001	In-Person	W 10am-11am, F 11am-1pm	Dr. Gracia Dong
LEC0201/2002	Hybrid	F 3pm-5pm	Dr. Katherine Daignault
LEC0301	Hybrid	M 3pm-5pm	Dr. Katherine Daignault
LEC5101	In-Person	W 6pm-9pm	Dr. Gracia Dong

Course Contacts

Person	Role	Contact	Weekly Office Hours
Dr. Gracia Dong	Instructor	sta302@course.utoronto.ca	See Schedule on Quercus
Dr. Katherine Daignault	Instructor	sta302@course.utoronto.ca	See Schedule on Quercus
Head TA	Head TA	sta302@course.utoronto.ca	See Schedule on Quercus
Various Teaching Assistants	TA	Quercus Discussion Board	See Schedule on Quercus

COURSE OVERVIEW

Course Description: The course provides a solid introduction to data analysis with a focus on the theory and application of linear regression. Topics to be covered include: initial examination of data, correlation, simple and multiple regression models using least squares, inference for regression parameters for normally distributed errors, confidence and prediction intervals, model diagnostics and remedial measures when the model assumptions are violated, interactions and dummy variables, ANOVA, and model selection and validation. Statistical software will be used throughout and will be required for the completion of various assessments during the term. The development of strong written communication skills will be emphasized.

Learning Outcomes: By the end of this course, all students should be able to:

1. Recognize the importance of assumptions and limitations of linear regression models to gauge when linear models are appropriate to use and to be critical of their results.
2. Interpret the results of an analysis involving linear models for technical and non-technical audiences.
3. Apply methods of linear models and data cleaning to new datasets correctly using statistical software in a reproducible way.
4. Explain statistical concepts and theory of linear models to various audiences as would be required in the job market or collaborative environment.
5. Outline the correct use of linear models in a coherent and reproducible analysis plan.
6. Apply and extend linear model theory through completion of problem-solving questions

Pre-requisites: Pre-requisites are **strictly enforced by the department, not the instructor**. If you do not have the equivalent pre-requisites, you will be un-enrolled from the course. Students should have a second year statistics course, such as {STA238, STA248, STA255, or STA261}, a computer science such as {CSC108, CSC120, CSC121, or CSC148} and a mathematics course such as {MAT221(70%), MAT223, or MAT240} or equivalent preparation as determined by the department.

COURSE MATERIALS

Course Content: We have a common Quercus course page for all sections. All lecture slides, any recordings, assessment information and materials will be posted on this Quercus course page. Further, any important announcements will also be posted in Quercus. Please make sure to check it regularly.

Textbook: This course does not strictly follow any particular textbook, but rather merges material from a number of sources. **All of the below recommended textbooks are freely available as an electronic copy through the University of Toronto Library.** Our two primary reference texts will be

- *Linear Models in Statistics*, 2nd edition by Alvin C. Rencher and G. Bruce Schaalje (Wiley).
- *A Modern Approach to Regression with R*, by Simon J. Sheather (Springer)

Other helpful references from which practice problems may be assigned are:

- *Applied Regression Modeling*, 3rd edition, by Iain Pardoe (Wiley).
- *Methods and Applications of Linear Models*, 3rd edition, by Ronald R. Hocking (Wiley)
- *Applied Linear Regression*, 4th edition, by Sanford Weisberg (Wiley).

These are all useful books, but may present the material in a different order or in a different way. They are still good for additional explanation and practice problems. Other useful resources will be posted on the Quercus course page.

Statistical Software: We will be using the R Statistical Software for performing statistical analyses in this course. R is a free software that can either be downloaded onto your personal computer or used in a cloud environment. We encourage all students to use RStudio through the [JupyterHub](#) for University of Toronto. This will allow you to login with your official UofT credentials and use RStudio without the need for a local installation and can be run on any device that has access to an internet connection. More information about using RStudio in JupyterHub will be provided early in the term. R code will be made available on the course page and, along with any additional resources, should be sufficient to complete any assessment involving data analysis.

COMMUNICATION

How your instructor will communicate with you: All communication will be made through Quercus announcements or during lectures. Please ensure that you check Quercus regularly so you don't miss anything important.

Quercus Discussion Board for content questions: We will be using the Quercus Discussion Board as an online discussion forum, which can be accessed through the Quercus course page. The instructor and TAs will monitor the board and will help answer questions but students are encouraged to answer posts and help their fellow classmates. All questions regarding course content, including lecture materials and assessments, should be posted here.

When to email the instructor: The instructor will only respond to emails of a private or sensitive nature. If you email the instructor with content related questions, you will be asked to repost your question on the content board so the answer may benefit all students. Should you need to email the instructor about a sensitive or personal nature, please use your official mail.utoronto.ca email, include your full name and student number. **Include your lecture section (e.g. L0101) in the subject line so it is received by the correct person.** Send all course related emails to sta302@course.utoronto.ca. Please allow up to 2 business days for a reply. Emails will not be monitored on evenings and weekends.

A note on email and discussion board etiquette: Please make sure that you communicate politely and respectfully with all members of the teaching team and your fellow classmates. Written communications can sometimes take a tone other than what was intended (e.g. can come off as dismissive, rude or insulting), so make sure you re-read or read out loud your email/post before sending it to make sure it has the tone you intended. For more tips on respectful communication, see [professional communication tips](#). The Quercus discussion board is a teaching and learning tool and therefore should only be used as such. Any posts that detract from the learning goal of the board will be removed to keep the board a safe space.

Office Hours: Instructor and TAs will hold office hours in a combination of online and in-person formats. The office hour schedule and mode of delivery will be posted on Quercus once finalized. Students can attend the office hours of any instructor or TA, regardless of which section they are enrolled in. It is recommended that you visit office hours whenever you have a question about the material. It is always important to have material clarified as quickly as possible. Don't wait until the last minute to ask your questions!

GRADING SCHEME

Each student's final grade will be computed according to the below grading scheme. No special rounding rules or individual grade adjustments (e.g. to meet GPA cut-offs, minimal requirements for programs, etc.) will be used to calculate course grades. No special reweighting of assessments or extra work will be accepted to account for perceived poor performance, nor to account for any assessment(s) that have been missed without accommodation. There are no exceptions to these policies. The same grading scheme will be used for all sections.

Assessment	Date Due/Occurring	Weight
<u>Engagement Activities</u>		
Quercus Quizzes (7 out of 10)	Tuesdays by 11:59 ET	2%
Quercus Reflections/Exit Tickets (7 out of 10)	Tuesdays by 11:59 ET	2%
MarkUs Worksheets (7 out of 10)	Tuesdays by 11:59 ET	5%
Pre-requisite and Syllabus Quiz	Tuesday, Sept. 16 by 11:59 ET	1%
Term Test*	Thursday, Oct. 16, 1:30-3:30pm ET	20%
<u>Final Project (2 main parts + Groupwork)</u>		
Part 0: Group Teamwork Agreement	Thursday, Oct. 23, 11:59pm ET	9%
Part 1: Research Question/Proposal	Thursday, Oct. 23, 11:59pm ET	
Part 2: Final Presentation and Poster	Friday, Nov. 28, 11:59pm ET	15%
Part 3: Individual Group Work Reflection	Friday, Nov. 28, 11:59pm ET	1%
Group Work (Part 0, Part 3, and Instructor Discretion)		
Final Exam* (during final exam period)	Scheduled by FAS	45%

*Students must achieve a grade of at least 40% on the weighted average of their Term Test and Final Exam grades (26% out of the 65%) to pass the course, even if their grade will be higher than 50% based on the above grading scheme. Otherwise, their final course grade will be the weighted average of their Term Test and Final Exam.

Please note that the last day to drop the course without academic penalty is November 11, 2025.

COURSE COMPONENTS

For the Fall 2025 offering of STA302H1, our week will start on Wednesday, and end on Tuesday. For example, Wednesday, September 3 to Tuesday, September 9 is Week 1, and so on.

For Hybrid Sections (L0201/2002 and L0301)

Asynchronous Online Pre-Class Material (1 hour): Prior to each lecture, students will be responsible for working through a Guided Practice Module that includes watching short lecture videos (less than one hour), working on practice problems and submitting these to a Quercus Quiz. This pre-class work covers the basic course content and is necessary for the in-person class activities during class. **The expectation is that you have watched the videos and attempted the quiz questions, even if you have not yet submitted the quiz.** This pre-class work replaces the 1-hour lecture time on the timetable (i.e., Wednesdays 3-4pm for L0201 and Fridays 9-10am for L0301).

Synchronous In-Person Class (2 hours): In person classes occur following completion of the online pre-work. These classes will consist of a combination of short lecturettes, activities and labs. Where possible, you are encouraged to bring a laptop or tablet (or any device that can connect to a web browser) to class for labs, however most activities can be done in pairs. The in-person classes will solidify the knowledge from the pre-work through practice and application with the support of the instructor and teaching assistants. After the In-person class, students are expected to complete their weekly reflection on Quercus and turn in their MarkUs worksheet.

For In-Person Sections (L0101/2001 and L5101)

In-person lectures will follow a traditional lecture format, meeting for 3 hours a week. After class, it is expected that students complete each week's Quercus Quiz, Reflection, and MarkUs worksheet.

EVALUATION BREAKDOWN

Engagement Activities

Quercus Quizzes: Students will be asked to submit a weekly quiz through Quercus due **Tuesdays at 11:59pm EST**. These quizzes are meant to help you as students gain insight into your understanding of basic course content each week. Your responses will also help the teaching team gauge whether additional review of basic concepts is needed. These quizzes are **formative** and will therefore only be counted for completion (not correctness). To obtain a completion mark on each quiz:

- Students must answer ALL questions to receive credit;
- Any unanswered questions, or gibberish or irrelevant answers will NOT receive credit.

Only 7 out of 10 such quizzes will be counted towards this portion of the grading scheme. No extensions will be granted, and no accommodations will be made for missed quizzes beyond the flexibility built into the grading scheme (7 out of 10 are counted). All students have until 11:59pm EST on Tuesdays to submit their quiz. However, due to the nature of the quizzes:

- For In-Person Sections (L0101/2001 and L5101): we recommend submitting your quiz after your in-person lectures are completed each week.
- For Hybrid Sections (L0201/2002 and L0301): we recommend submitting your quiz **before** the in-person class meeting as it will ensure students are adequately prepared for the in-class activities and material.
 - For students who do complete their quizzes before class each week, only 6 out of 10 quizzes will be counted towards your Quercus Quiz grade (instead of 7 out of 10).

Quercus Reflections/Exit Tickets: After each week's in person meeting, students will be asked to submit a reflection through a Quercus quiz due **Tuesdays at 11:59pm EST**. Reflections will only be counted for completion, so to obtain a completion credit:

- Students must answer ALL questions to receive credit;
- Any unanswered questions, or gibberish or irrelevant answers will NOT receive credit.

Only 7 out of 10 reflections will be counted towards this portion of the grading scheme. As such, no extensions will be granted, and no accommodations will be made for missed submissions.

MarkUs Worksheets: Each week, students will complete a worksheet that provides practice in applying the content using R as well as solidifying the weekly concepts using data. Worksheets are to be submitted to MarkUs for grading and are due **Tuesdays at 11:59pm EST** for all sections.

- For In-Person Sections (L0101/2001 and L5101): students are expected to complete their worksheet after class.
- For Hybrid Sections (L0201/2002 and L0301): there will be in-class time dedicated to working through the worksheet, and students are expected to submit their worksheet during or immediately after lecture.

These weekly worksheets are **formative** and will therefore only be counted for completion (not correctness). To obtain a completion mark on each worksheet, students must pass 75% or more of the auto-graded MarkUs tests. TAs and instructors can help you if you are not familiar with using the MarkUs platform. Only 7 out of 10 worksheets will be counted towards this portion of the grading scheme. As such, no extensions will be granted, and no accommodations will be made for missed submissions.

Syllabus and Pre-requisite Quiz: There will be one multiple choice quiz early in the term to ensure that students are prepared for the course in terms of their knowledge of prerequisite material and the syllabus content. This quiz will be conducted on Quercus and will be open for students to take at any time until the deadline. Students will get 2 attempts and the highest score will be counted towards their final grade. On each attempt, students will be given 1 hour to complete the quiz, and each question will show up one at a time and will be locked once the question has been answered.

Term Test

The term test will be conducted in person on **Thursday, October 16, 2025, 1:30-3:30pm ET**. More details regarding format will be communicated closer to the test date.

A makeup term test is tentatively scheduled for Thursday, October 23, 2025 11am-2pm ET for students who miss the original sitting for a verified reason.

Students must contact the teaching team using the Microsoft Forms linked on the Quercus course page if they are unable to write the term test. If no request for accommodation is received for a missed term test (or it is incomplete or without documentation), then your term test grade will be recorded as 0%. **Please note the following deadlines for contacting the teaching team regarding term test conflicts:**

- Any student with a scheduled or academic conflict (e.g. lecture or term test for another class, scheduled U of T sports game) with the original term test date/time are eligible to write in the makeup sitting. **You must contact the teaching team NO LATER THAN Tuesday, September 23, 2025 to advise us of this conflict.** No accommodations can be guaranteed for conflicts reported after this date as space in the makeup sitting is extremely limited.

- Any student with a scheduled or academic conflict with **BOTH** the original and makeup sittings must contact the teaching team **NO LATER THAN Tuesday, September 23, 2025** to advise us of this conflict. Accommodations will be determined on a case by case basis. No accommodations can be guaranteed for conflicts reported after this date.
- Students who miss the term test for an unscheduled reason (e.g. illness, personal emergency) have **1 week (BEFORE October 23)** to submit documentation. If your documentation is verified, you will be allowed to write the makeup term test.
- Students who miss the makeup term test after missing the term test for a valid reason have **1 week (BEFORE October 30)** to submit documentation. Accommodations will be determined on a case by case basis.

The following documentation will be accepted:

- Absence declaration via ACORN. Students may only use the Absence Declaration once per academic term (e.g., the Fall term) for a maximum period of 7 consecutive calendar days. See [A&S Student Absences](#) for additional information on eligibility. The once-per-term limit is set by the ACORN Absence Declaration Tool. Once a declaration is submitted, students will be restricted from using the tool to declare any further absences in that term.
- U of T Verification of Illness or Injury Form (VOI)
- Letter of Support from your College Registrar
- Letter of Support from Accessibility Services
- For scheduled and academic conflicts **ONLY**: A screenshot of your timetable from ACORN, showing your student ID and the course code and time of the conflicting class. We will then contact your instructor to confirm your enrolment.

Final Project:

The final project will consist of a data analysis on a dataset. Students will be required to demonstrate their understanding of the methods taught in the course by developing a reasonable regression model that addresses a valid research question using the techniques from the course. The students will be responsible for choosing the correct methods to apply and providing appropriate justifications defending their choices. The final project is a scaffolded assessment involving 2 main parts (Parts 1 and 2), which will be done as a group of 3 students. An additional individual reflection component (Part 3) will be graded on an individual basis.

- Part 0 – Group Teamwork Agreement: Each group will create and sign their teamwork agreement to demonstrate how your group plans to work together effectively and to resolve conflict.
- Part 1 – Proposal: Students will be tasked with defining a research question that can be answered with a dataset using linear regression. This portion of the project will require students to provide their research question, explain why linear regression would be a reasonable method to answer this question, and highlight important characteristics of their dataset. Students will also provide a plan for the remainder of the term, outlining the steps that they plan to take in their data analysis for the final project on their chosen dataset. This will help in developing a consistent analysis workflow and in structuring the methods of analysis.
- Part 2 – Poster Presentation: Students will put together a research poster and presentation that outlines the relevance of their proposed research question, the process of their analysis, the results of the performed data analysis, and a discussion of the meaning of the results as well as limitations of the analysis with respect to the statistical tools used/decisions made or the data used.

- Part 3 – Group Work Reflection: Individually, students will reflect on their groupwork experience throughout the term.

All group members are expected to contribute to the project equally and provide an outline of their involvement in the project. If there is substantial evidence that an individual group member has not contributed equitably to all project parts, a grade adjustment may be considered at the discretion of the instructors. More detailed instructions for each part will be provided on Quercus at a later date.

LATE ASSESSMENT AND EXTENSION REQUEST POLICY

‘No Questions Asked’ Extensions: All groups for each part of the final project will have access to ‘No Questions Asked’ (NQA) extensions until 11:59pm ET of the Sunday following the due date to help manage illness, technological issues, or other unexpected situations. Groups may use these extensions on any and all parts of the final project **without having to request an extension from the instructor**. The NQA extensions work as follows:

- Students **should not** notify the instructors when using these extensions - we will simply accept the work until 11:59pm ET of the Sunday after the assigned deadline without penalty.
- There is a separate dropbox on Quercus if you would like to use the NQA Extension.
- Groups planning to use these extensions should only submit material to Quercus when they are ready to make their final graded submission (and only to the NQA Extension dropbox on Quercus).
- If you submit to both the regular and the NQA Extension dropbox, the latest submission you submit to the regular dropbox will be graded (as if you did not use the NQA extension).
- All group members must agree to use this extension, so groups should strive to have clear communication throughout the term.
- Groups who turn in the work by the original assigned deadline (i.e. do not use the extension) will receive their graded work and feedback earlier than groups who use the NQA extension. There is no guarantee for when grades and feedback will be released for students who submit after the assigned deadline.
- No questions about the project will be addressed via email, in person, or through the discussion board by the teaching team after the original assigned deadline.
- Extensions beyond the NQA period will not be granted for any reason.

Late Submission Policy: Due to the flexible grading schemes and extension policy, no late submissions will be accepted throughout this course.

Extreme Situations/Prolonged Illness: Should a student be experiencing a prolonged illness or other situation that prevents them from turning in their work or contributing to the group project, they should **immediately contact BOTH their instructor and College Registrar** to inform them of their situation. The teaching team cannot support you and your group if we are not made aware of these situations as soon as they occur.

Accessibility-Related Extension Requests: Students registered with Accessibility Services should notify the instructor as soon as possible if additional time is needed on assessments that are eligible for such accommodation. Please **notify the instructor by course email of your situation and cc your accessibility advisor** in the process. The instructor will work with the accessibility advisor to determine an appropriate accommodation for your situation. However, note that group work can generally not be granted further extensions beyond those in the above policy.

MISSED ASSESSMENT POLICY

If you experience a prolonged absence due to illness or emergency that prevents you from completing any number of assessments, please contact your College Registrar as soon as possible so that any necessary arrangements can be made.

Missed Engagement Activities: There will be no accommodations made for missing the engagement activities. The Quercus quizzes, reflections and MarkUs worksheets already provide accommodation for missing up to 3 weeks of class. The pre-requisite/syllabus quiz will be available for a substantial amount of time and so no accommodation will be offered for this.

Missed Term Test: Please see the Term Test section above.

Missed Final Project: Due to the nature of this assessment, there will be no extensions on any portion of the project under any circumstances other than the NQA extension period. Late projects will not be accepted and there are no accommodations available for individuals missed contributions to their group's project

REGRADE REQUESTS

Regrade requests will be accepted for all assessments. Regrade requests must provide a justification for where there exists a grading error and/or how the work meets the grading rubric. These justifications must further be backed up with concrete references to the course material. All regrade requests will be accepted through a Microsoft Forms linked on the Quercus course page and will be accepted no later than one week after the grade for that assessment is released. **No regrade requests will be accepted by email, in person, or after the 1 week deadline.** The teaching team further reserves the right to re-evaluate the assessment in its entirety (i.e. grades can go up, down, or remain unchanged). Please allow a few weeks for regrade requests to be processed.

INTELLECTUAL PROPERTY

Course materials provided on Quercus, such as lecture slides, assessments, videos and solutions are the intellectual property of your instructor and are for the use of students currently enrolled in this course only. Synchronous sessions will be recorded and be made available to other students enrolled in the course. **Providing course materials to any person or company outside of the course is unauthorized use and violates copyright.**

ACCEPTABLE USES OF GENERATIVE AI

ChatGPT and other generative AI are freely available tools that can perform a variety of functions for us. However, it's important to understand how such tools are allowed to be used in this course. Acceptable uses of generative AI in this course include:

- To assist with basic writing and grammar (e.g., as a spellchecker or to ensure consistency of verb tenses).
- Synthesizing or explaining course concepts while learning and studying to contribute to their understanding of the course material.
- Looking up appropriate syntax of individual R functions for use in a data analysis or for understanding errors that may arise when running R code.

However, the work turned in by students must ultimately be their own and students will therefore be accountable for the work they turn in. Unacceptable uses of generative AI in this course include:

- Copying from any generative artificial intelligence applications, including ChatGPT and other AI writing and coding assistants, for the purpose of completing assignments in this course.

- Producing data analysis, written work, or any other piece of work meant for grades.

In summary, generative AI like ChatGPT can be really helpful in your learning process and to improve skills valued in the workplace. However, it cannot be used as a substitute for learning and material produced from these tools should not be passed off as your own. This would be considered academic misconduct (see below). The instructor therefore reserves the right to ask students to explain their work and their process for creating their assignment.

ACADEMIC INTEGRITY

The University treats cases of plagiarism and cheating very seriously. It is the students' responsibility for knowing the content of the University of Toronto's [Code of Behaviour on Academic Matters](#). All suspected cases of academic dishonesty will be investigated following procedures outlined in the above document. If you have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, you are expected to seek out additional information on academic integrity from your instructor or from other institutional resources (see <http://academicintegrity.utoronto.ca/>). Here are a few guidelines regarding academic integrity:

- Using ChatGPT and other generative AI for any purpose not outlined above.
- Being dishonest when reporting an illness or personal emergency to get an extension or accommodation is an academic offence.
- You may consult class notes/lecture slides during take-home assessments, however sharing or discussing questions or answers with other students is an academic offence.
- Students must complete all assessments individually. Working together is not allowed unless otherwise specified.
- Paying anyone else to complete your assessments for you is academic misconduct.
- Completing assessments for another student is academic misconduct.
- Sharing your answers/work/code with others is academic misconduct.
- Using sources external to the course (anything not on Quercus) on an assessment is an academic offence.
- All work that you submit must be your own! You must not copy mathematical derivations, computer output and input, or written answers, etc. from anyone or anywhere else. Unacknowledged copying or unauthorised collaboration will lead to severe disciplinary action, beginning with an automatic grade of zero for all involved and escalating from there. Please read the UofT Policy on Cheating and Plagiarism, and don't plagiarise.

PLAGIARISM DETECTION TOOL

Normally, students will be required to submit their course written work to the University's plagiarism detection tool for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their written work to be included as source documents in the tool's reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of this tool are described on the Centre for Teaching Support & Innovation web site <https://uoft.me/pdt-faq>.

ACCESSIBILITY NEEDS

The University of Toronto offers academic accommodations for students with disabilities. If you require accommodations, or have any accessibility concerns about the course, the classroom, or course materials, please contact Accessibility Services as soon as possible: accessibility.services@utoronto.ca or <http://accessibility.utoronto.ca>.

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CIA's University Accreditation Program and Pathway to Actuarial Credential

UAP has moved away from the course-by-course accreditation and is now based on a program accreditation method. Under the new credentialing pathway, to obtain ACIA (Associate of CIA) professional credential, students need to:

1. Complete a degree from an actuarial program (ACT Specialist or Major) at University of Toronto and pass a list of mandatory courses. No minimum course grade or GPA is required. The full list of UofT's 16 mandatory courses are: ACT240, ACT245, ACT247, ACT348, ACT349, ACT370, ACT451, ACT452, ACT466, STA237/STA257, STA238/STA261, STA302, STA314, ECO101, ECO102, MGT201/RSM219;
2. Complete the ACIA online Modules (offered through CIA directly);
3. Complete an online, open-book ACIA Capstone Exam (offered through CIA directly)

For further information on ACIA modules and Capstone Exam, please check CIA's website (cia-ica.ca) or email education@cia-ica.ca.

TENTATIVE SCHEDULE OF TOPICS

Below is a tentative schedule of topics to be covered in class. The schedule is subject to change and modification.

Week (Dates)	Content
1 (Sept. 3-9)	Simple Linear Regression Basics: relationships, notation, estimation, interpretation.
2 (Sept. 10-16)	Multiple Linear Regression Basics relationship, notation, estimation, interpretation.
3 (Sept. 17-23)	Assumptions of Linear Regression: introduction to assumptions, residuals and residual plots, detecting violations, ethics workshop 1.
4 (Sept. 24-30)	Correcting Assumptions: Transformations, interpretation, role in sampling distributions.
5 (Oct. 1-7)	Inference in Linear Regression: Hypothesis tests and/or confidence intervals on coefficients and mean responses, prediction intervals
6 (Oct. 8-21)	Decomposition Of Variance Part 1: Sum of squares decomposition, ANOVA F test, Partial F test
(Oct. 16)	TERM TEST
7 (Oct. 22 - Nov. 4)	Decomposition of Variance Part 2: coefficients of determination, multicollinearity
Oct. 28 - Nov. 1	READING BREAK
8 (Nov. 5-11)	Problematic Observations: Outliers, Leverage Points, Influential Points, Detection and Impact
9 (Nov. 12-18)	Model Building and Variable Selection: Context, likelihood criteria, automated methods, hypothesis tests, ethics workshop 2.

10 (Nov. 19-25)	Model Validation and Wrap-up: How to validate your models, MLR data analysis process overview
11 (Nov. 26 - Dec. 2)	Review/Office Hour class: Final exam review and/or Q&A and/or Wrap-up.
Dec 5-23	Final assessment period