

# Methods of Data Analysis 1

University of Toronto

Department of Statistical Sciences

STA302H1F/1001H1F Fall 2022

Updated by Departmental Request on Sept. 13, 2022

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**Section details:**

LEC0101/2001: Wed. 11am-1pm, Fri. 11am-12pm

LEC0201: Wed. 3pm-5pm, Fri. 3pm-4pm

Classroom: MS 3153 (all above lectures)

**Instructor:**

Dr. Katherine Daignault

**Course email:**

sta302@utoronto.ca

**Office:**

UY9167

**Office Hours:**

TBD

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## 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 sections L0101/2001 and L0201 of this course. All lecture slides, any recordings 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*, 2nd edition, by Iain Pardoe (Wiley).
- *Methods and Applications of Linear Models*, 2nd edition, by Ronald R. Hocking (Wiley)
- *Applied Linear Regression*, 3rd 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 shown in class will be available on the course page and along with any additional resources, should be sufficient to complete any assessment involving data analysis.

## COURSE COMPONENTS

**Lectures:** Lectures will be conducted in-person in MS B108 for sections L0101/2001 and L0201. Slides will be available no later than the Tuesday night preceding class. Class time each week will comprise of a combination of lecturing, in-class activities, and code-along sessions. Where possible, you are encouraged to bring a laptop or tablet to follow along with the code.

**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. 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!

**ED Discussion Board:** We will be using the ED-STEM Discussion Board as an online discussion forum, which can be accessed through the Quercus course page. **All questions about course material should be posted here** or asked during TA/instructor office hours. 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.

## 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.

**Where to send content questions:** We will be using the ED Discussion board to collect student questions regarding course content, assignments, etc. All questions 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, student number and lecture section (e.g. L0101) in the text. Send all course related emails to [sta302@utoronto.ca](mailto:sta302@utoronto.ca). Please allow up to 48 hours 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 ED 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.

## GRADING SCHEME

Both undergraduate and graduate students will be offered two grading schemes that will be used to calculate your final grade. Your final grade for the course will automatically be determined by the **higher** of the two grading schemes. Undergraduate students will have the grading scheme as outlined below.

Graduate students will use the same grading schemes, with the exception that the Term Test will be worth 20% (or 24%, depending on scheme) while the Final Written Report (Part 3) will be worth 40%.

Assessment	Date Due/Occurring	Scheme 1	Scheme 2
In-class Participation	Ongoing during class time	4%	0%
Pre-requisite and Syllabus Quiz	By Sept. 26 at 11:59PM ET	1%	1%
Reproducible Writing Exercise			
Part 1: Draft/Create	Sept. 26 by 11:59PM ET	2%	2%
Part 2: Peer Feedback/Assess	Oct. 3 by 11:59PM ET	2%	2%
Part 3: Final Draft/Revise	Oct. 7 by 11:59PM ET	6%	6%
Term Test (during scheduled class)			
LEC0101/2001	Oct. 26 11:10-12:50PM ET	30%	34%
LEC0201	Oct. 26 3:10-4:50PM ET		
Final Project (3 parts)			
Part 1: Research Question/Proposal	Oct. 20 by 11:59PM ET	12.5%	12.5%
Part 2: Analysis Flowchart	Nov. 17 by 11:59PM ET	12.5%	12.5%
Part 3: Written Final Report	Tentatively Dec. 20	30%	30%

Please note that the last day to drop the course without penalty is November 16, 2022.

## MINIMUM PASSING REQUIREMENT

In order for the instructor to be able to reasonably assess the ability of each student with the course material, a minimum amount of work must be submitted to provide enough evidence of proficiency. To this end, students must submit the following assessments in order to be considered for a passing grade in the course: **the term test, and part 3 of the final project**. As these are summative assessments, if a student fails to submit one or more of these assessments (even if all other assessments have been completed), it will not be possible to gauge the student's proficiency with the material and will therefore not be able to pass the course.

## EVALUATION BREAKDOWN

### In-Class Participation:

We will be using Poll Everywhere to pose questions to students during lecture. Students will be asked to respond to these questions on any electronic device using Poll Everywhere. In order for your participation to be recorded towards your final grade, students should register for an account at [PollEv.com/katherinedai702/register](https://poll Everywhere.com/katherinedai702/register) and use their UofT email address (this is how we will match responses to you for credit). **It will be the student's responsibility to ensure that they are logged into this account at the start of each class.**

In-class participation is optional. Should a student choose not to participate, their final grade will be computed using Scheme 2. For students who opt in to participation, your in-class participation grade will be computed using the scheme below. Note that this scheme allows you to miss up to 25% of questions posed and still receive full credit for your participation throughout the term. **Due to this flexibility, there is no accommodation for missed in-class participation for any reason.**

% Polls Answered	Participation Mark (/4%)
0%	0%
$0 < \% \text{ answered} < 25$	1%
$25 \leq \% \text{ answered} < 50$	2%
$50 \leq \% \text{ answered} < 75$	3%
$75 \leq \% \text{ answered} \leq 100$	4%

**Syllabus and Pre-requisite Quiz:** There will be 1 short 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.

**Reproducible Writing Exercise:** This exercise is to highlight the importance of writing in science, specifically in a way that another independent researcher could reproduce what you have done based solely on a summary of your process. It also provides an opportunity for students to experience the scientific review and editing process. It will take place in three parts:

- Part 1 - Draft/Create: Students will submit a draft summary of a data analysis process that they applied to a dataset, for completion points (i.e not graded for credit only for completeness of submission).

- Part 2 - Peer Feedback/Assess: Students will have their draft reviewed by another student (peer) who will attempt to replicate their analysis. The reviewer student will provide comments on what is good and what could be improved with the draft. This will be graded for completion only (i.e not graded for credit only for completeness of submission).
- Part 3 - Final Draft/Revise: Students will revise their original draft, taking into account the feedback provided by their peer reviewer and submit their final product for grades. They will also rate the feedback provided to them by their reviewer based on helpfulness.

**Term Test:** The term test will be conducted in person during the scheduled Wednesday class time for all sections (see top of page 1). The test will be approximately 1 hour and 40 minutes long. More details will be communicated closer to the test date. The term test will take place during each section's scheduled lecture time on **Wednesday October 26**. The test will cover material from Weeks 0-6. All students will be required to write the test in the lecture time in which they are enrolled.

**Final Project:** The final project will be due during the final assessment period (date to be confirmed as soon as possible) and will consist of a data analysis on a novel dataset of your choice. Students will be required to demonstrate their understanding of the methods taught in lecture by developing a reasonable regression model that addresses a valid research question using the techniques taught in class. 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 3 parts:

- Part 1- Research question and dataset selection: Students must find a dataset available online and define a research question that can be answered with this dataset using linear regression. Students will need to explain why their research question is important and how linear regression may be used to answer it. A short exploratory data analysis of the chosen dataset will also be required.
- Part 2 - Analysis Plan Flowchart: Students will be asked to put together a flowchart 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 flow and make writing the final report easier.
- Part 3 - Final Project Report: Students will put together a scientific report 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.

The final project will be done individually, and must be typed and submitted by the deadline. More detailed instructions will be provided at a later date.

## **LATE ASSESSMENT AND EXTENSION REQUEST POLICY**

**'No Questions Asked' Extensions:** All students will have access to 2 **'No Questions Asked' (NQA) extensions** to help manage multiple deadlines across multiple courses and for short-term illness or other unexpected situations. These are extensions of up to 48 hours each that a student can choose to use on any eligible assessment during the term **without having to request an extension from the instructor**. The NQA extensions work as follows:

- Students **should not** notify the instructor when using these extensions - we will simply accept the work up to 2 days late without any penalty.
- These extensions can only be used one at a time (i.e. cannot be combined) and only on the Revise part (part 3) of the Reproducible Writing Exercise and parts 1 and 2 of the final project.

- Once both NQA extensions have been used, late penalties will apply on any further assessment that is turned in late.
- We will apply these extensions by default to any eligible piece of work turned in late in the order that the work is turned in. This means that, for example, if a student submits the Revise portion of the Reproducible Writing Exercise and final project part 1 both late, they will have used up both their NQA extensions and thus late penalties will apply on any other late submission. We will not entertain requests for NQA extensions to be applied to later pieces of work after they have already been used on earlier submissions, nor will a student be able to request which assessment the NQA extensions will be applied towards.
- It is recommended, where possible, to keep the NQA extensions for assessments that have larger late penalties and/or are worth more towards your final grade.

**Extreme Situations/Prolonged Illness Extensions:** Should a student be experiencing a prolonged illness or other situation that prevents them from turning in their work even after the use of their 'No Questions Asked' extension, they should **immediately contact their instructor and College Registrar** to inform them of their situation. They should also submit an [Absence Declaration form on ACORN](#) that lists every day during which they were incapacitated and unable to work. Accommodations or further extensions will not be considered without a completed declaration, and will only be considered for extreme circumstances.

**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 extensions. Please **notify the instructor by email of your situation and cc your accessibility advisor** in the process. The instructor will work with the accessibility advisor to determine an appropriate extension for your situation.

Assessment	Late Penalty/Extension Policy
Syllabus/pre-requisite quiz, and in-class participation	no late submissions/extensions
Reproducible Writing Exercise Parts 1 & 2	1-hour upload grace period, not eligible for any extensions, no late submissions accepted after grace period
Reproducible Writing Exercise Part 3	1-hour upload grace period, will accept submission up to 3 days after deadline with 5% lost per each day late, eligible for NQA extension.
Final Project Part 1 & 2	1-hour upload grace period, will accept up to 3 days after deadline with 10% lost per each day late, eligible for NQA extension.
Final Project Part 3	1-hour upload grace period, not eligible for any extensions, no late submissions accepted after grace period

## 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 Quiz and in-class participation:** There will be no accommodations made for missing the syllabus and prerequisite quiz due to the flexible deadline and lengthy availability of the quiz on Quercus. There will be no accommodations made for missed in-class participation due to the flexible grading scheme (see evaluation breakdown for details).

**Missed Reproducible Writing Exercise:** Due to the scaffolded nature of the exercise, there is no accommodation for missing Part 1 and 2 of the exercise. Part 3 of the exercise is eligible for an NQA extension (see above for details) but no further accommodations will be made.

**Missed Term Test:** If a student is experiencing a serious personal illness or emergency on the date of the test, the student **must declare their absence on ACORN and notify the teaching team via email no later than one week after the date of the test.** A make-up test will then be scheduled at a date and time determined by the instructor. **The format of the make-up is at the discretion of the instructor and may not resemble the format of the original (e.g. an oral exam).**

**Missed Final Project:** Part 1 and 2 of the final project are eligible for NQA extensions and late submissions will be accepted (see above for details). Thus no further accommodations will be made for missing these components of the final project. The final project part 3 must be completed in order to meet the minimum work requirement to pass the course, so no accommodations will be made for missing the final assessment. Students will be given ample time to complete the assessment and extensions in general will not be granted.

## Assignment Project Exam Help

### 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 form available 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 or after the 1 week deadline.** The instructor 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 by the instructor.

<https://powcoder.com>

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### 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.**

### 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:

- 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 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.

## Assignment Project Exam Help

### 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](mailto:accessibility.services@utoronto.ca) or <http://accessibility.utoronto.ca>.

### CIA's University Accreditation Program and Pathway to Actuarial Credential

This course is one of the mandatory courses under Canadian Institute of Actuaries (CIA)'s University Accreditation Program (UAP). UAP has moved away from the course-by-course accreditation method and towards program accreditation method (the "Pathway 1 of CIA qualification"). Under the new pathway, in order 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 as long as students pass all the mandatory courses. The full list of UofT's 16 mandatory courses are: ACT240, ACT245, ACT247, ACT348, ACT349, ACT370, ACT451, ACT452, ACT466, STA257, STA261, STA302, STA314, ECO101, ECO102, MGT201/RSM219. For transition: CIA will accept an actuarial degree from UofT completed between June 30, 2015 and October 31, 2023 without all the specified mandatory courses.
2. Complete the ACIA Module (administered by CIA, projected Spring 2023). For transition: a student can be exempt from the ACIA Module if they complete SOA exam PA and the 8 FAP Modules and assessments by December 31, 2023.
3. Complete an open-book ACIA Capstone Exam (administered by CIA, projected Fall 2023). For transition: a student can be exempt from the capstone exam by completing any combination of UAP credits or exams for P, FM, IFM, LTAM, STAM and SRM by October 31, 2023. **The deadline to apply for UAP credits is September 30, 2023.**



Details on the new pathway for students can be found here: <https://education.cia-ica.ca/acia/acia-for-accredited-university-students/>.

## 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
0 (Sept. 9)	<b>Reproducibility and Communication:</b> importance of clear and reproducible communication, subjectivity of statistical tools, introduction to polling software
1 (Sept. 12-16)	<b>Introduction and Good Data Practices:</b> syllabus overview, intro to Jupyter-Hub and RMarkdown, good data exploration, good communication practices
2 (Sept. 19-23)	<b>Introduction to Modelling:</b> statistical models, modelling goals, validation sets, framing a research question
3 (Sept. 26-30)	<b>The Linear Regression Model:</b> LS estimation, interpretation of model coefficients, types of predictors, intro to assumptions
4 (Oct. 3-7)	<b>Confidence and Tests in Regression:</b> Sampling distributions, CIs and Tests on regression components, prediction intervals, estimate of error variance
5 (Oct. 10-14)	<b>Decomposing the Variance:</b> Sum of squares decomposition, ANOVA and ANCOVA F tests, Partial F test
6 (Oct. 17-21)	<b>Identifying and Mitigating Violated Assumptions:</b> residual plot diagnostics, transformations for non-constant variance and non-linearity
7 (Oct. 24-28)	<b>TERM TEST</b> and introduction of simulation
8 (Oct. 31-Nov. 4)	<b>Impact of Model Violations:</b> use simulations to assess impact of violations, communicate limitations of tools
Nov. 7-11	READING BREAK
9 (Nov. 14-18)	<b>Problematic Observations:</b> Outliers, Leverage Points, Influential Points, Detection and Impact
10 (Nov. 21-25)	<b>Related Covariates and Model Building:</b> Multicollinearity and VIF, basics of model selection using coefficients of determination and other measures
11 (Nov. 28-Dec. 2)	<b>Model Validation and Wrap-up:</b> How to validate your models, MLR data analysis process overview, extensions of linear regression models
12 (Dec. 5-9)	<b>Final Project Resources:</b> Writing workshop on reports
Dec 11-20	Final assessment period - <b>Final project due tentatively on Dec. 20</b>

## CALENDAR OF DATES AND DEADLINES

For a complete list of due dates and synchronous class times, see the attached calendar. It is recommended that you save/print the calendar and/or copy the dates to your personal calendar to make it easier to stay on track with the course.

# SEPTEMBER 2022

SUN

MON

TUE

WED

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FRI

SAT

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Labour Day  
(Holiday)

Assignment Project Exam Help

Fall 2022 Term  
Begins

L0101/L2001  
lecture (11AM-  
12PM)

<https://powcoder.com>

L0201 lecture (3-  
4PM)

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L0101/L2001  
lecture (11AM-  
1PM)

L0101/L2001  
lecture (11AM-  
12PM)

L0201 lecture (3-  
5PM)

L0201 lecture (3-  
4PM)

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L0101/L2001  
lecture (11AM-  
1PM)

L0101/L2001  
lecture (11AM-  
12PM)

L0201 lecture (3-  
5PM)

L0201 lecture (3-  
4PM)

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Reproducible  
Writing Exercise  
Part 1 due  
@23:59ET

L0101/L2001  
lecture (11AM-  
1PM)

L0101/L2001  
lecture (11AM-  
12PM)

Prereq quiz due  
@23:59ET

L0201 lecture (3-  
5PM)

L0201 lecture (3-  
4PM)

# OCTOBER 2022

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TUE

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Reproducible  
Writing Exercise  
Part 2 due @  
23:59ET

L0101/L2001 lecture  
(11AM-1PM)

L0201 lecture (3-  
5PM)

L0101/L2001 lecture  
(11AM-12PM)  
L0201 lecture (3-4PM)

Reproducible Writing  
Exercise Part 1 due @  
23:59ET

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Thanksgiving  
(Holiday)

L0101/L2001 lecture  
(11AM-1PM)

L0201 lecture (3-  
5PM)

L0101/L2001 lecture  
(11AM-12PM)

L0201 lecture (3-  
4PM)

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L0101/L2001 lecture  
(11AM-1PM)

L0201 lecture (3-  
5PM)

Final project  
proposal due @  
23:59ET

L0101/L2001 lecture  
(11AM-12PM)

L0201 lecture (3-  
4PM)

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L0101/L2001 TERM  
TEST (11AM-1PM)

L0201 TERM TEST  
(3-5PM)

L0101/L2001 lecture  
(11AM-12PM)

L0201 lecture (3-  
4PM)

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Assignment Project Exam Help

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# NOVEMBER 2022

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L0101/L2001  
lecture (11AM-  
1PM)

L0201 lecture (3-  
5PM)

L0101/L2001  
lecture (11AM-  
12PM)

L0201 lecture (3-  
4PM)

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Assignment Project Exam Help

READING WEEK (NO CLASSES)

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L0101/L2001  
lecture (11AM-  
1PM)

L0201 lecture (3-  
5PM)

Final project  
flowchart due @  
23:59ET

L0101/L2001  
lecture (11AM-  
12PM)

L0201 lecture (3-  
4PM)

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L0101/L2001  
lecture (11AM-  
1PM)

L0201 lecture (3-  
5PM)

L0101/L2001  
lecture (11AM-  
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L0201 lecture (3-  
4PM)

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L0101/L2001  
lecture (11AM-  
1PM)

L0201 lecture (3-  
5PM)

# DECEMBER 2022

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L0101/L2001  
lecture (11AM-  
12PM)

L0201 lecture (3-  
4PM)

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Assignment Project Exam Help

L0101/L2001  
lecture (11AM-  
1PM)

LAST DAY OF  
CLASSES

<https://powcoder.com>

L0201 lecture (3-  
5PM)

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(Tentatively) Final  
project report due  
@ 23:59ET

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