School of Administrative Studies
Faculty of Liberal Art & Professional Studies
York University
**Winter 2022 Course Outline**
**AP/ADMS4375M 3.0 – Applied Time Series Analysis for Management**

**Instructor:** Dr. Yvonne Xu

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**Class Time & Location:** Wednesdays 7-10pmthrough Remote/Online Delivery

**NO REQUIRED TEXT**

**References:**

1. Cyber, D.C., and Chan, K (2008). ***Time Series Analysis with Application in R***, 2nd Edition, Springer.
2. Shumway R.H., Stoffer, D.S. (2012). ***Time Series Analysis and Its Applications With R*** ***Examples***, 4th Edition, Springer. ISBN-978-3-319-52451-1
3. Ruey S. Tsay (2010). ***Analysis of Financial Times Series***, 3nd Edition, Wiley.
4. Box, G.E.P., Jenkins, G.M. & Reinsel, G.C. (2008) ***Time Series Analysis: Forecasting and Control***, Hoboken, N.J. Wiley.
5. Keller, G., ***Statistics for Management and Economics.***
6. (Online Source) UCLA R Learning: <https://stats.idre.ucla.edu/other/annotatedoutput/>
7. (Online Source) <https://online.stat.psu.edu/stat510/>
8. (Online Source) UCLA SAS Learning Module <https://stats.idre.ucla.edu/sas/>

**Statistical Software:**

* R: <https://cloud.r-project.org/>
* RStudio: <https://www.rstudio.com/products/rstudio/>
* SAS: Available online through York U: <https://myapps.yorku.ca>.
* SAS University version is free: <https://www.sas.com/en_ca/software/university-edition.html>

**Grading Scheme:**

3 Lab Exercises/Assignments: 15%

2 Quizzes: 20% (1 hour using preferred software, class resumes after the quiz)

Midterm Exam: 30% (1.5 hours exam in-class and before lecture)

Final Project: Presentation 15% + Report 20%

**Class Format:**

1. Lectures and workshops
2. The eClass will be the major tool for lecture notes posting, quiz submission, lab exercises and a project.

**Course Outline:**

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| --- | --- | --- |
| **Date** | **Lecture Topics** | **Events** |
| Jan 12 | 1. Introduction to Time Series and SAS/R
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| Jan 19 | 1. Exploratory Data Analysis

(*Statistical Measures in Times Series*) | *Lab 1* |
| Jan 26 | 1. Smoothing and decomposition methods (I)
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| Feb 2 | 1. Smoothing and decomposition methods (II)
 | Quiz 1 |
| Feb 9 | 1. Autoregressive Models and Moving Average Models
 | *Lab 2* |
| Feb 16 | 1. Autoregressive Moving Average Model
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| Mar 2 | 1. Autoregressive Integrated Moving Average Models (I)
 | Mid-term |
| Mar 9 | 1. Autoregressive Integrated Moving Average Models (II)
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| Mar 16 | 1. Case Study (SARIMA Model)
 | *Lab 3* |
| Mar 23 | 1. Linear Regression Model with Time Series Errors
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| Mar 30 | 1. Conditional Heteroscedastic Models (ARCH Model)
 | Quiz 2 |
| Apr 6 | 1. Presentation
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**Exam and Quizzes:**

1. Test coverage will be announced 1 week prior to the test.
2. No make-up quizzes and mid-term exam. Mid-term/quiz weight can be transferred to the final with a valid “Attending Physician’s Statement”

<http://www.registrar.yorku.ca/pdf/attending-physicians-statement.pdf>

1. No late project is accepted.

**Important Dates:**

1. Last day to enroll **without permission of instructor**: **January 23**
2. Last day to enroll **with permission of instructor**: **February 7**
3. Last day to drop without receiving grade: **March 18**
4. Final Project Due: TBD

**RELEVANT UNIVERSITY/LA&PS/SCHOOL REGULATIONS**

**Applicable to all ADMS and DEMS courses**

**RELEVANT UNIVERSITY REGULATIONS**

Should there be any updates to these regulations, you can review the most recent Faculty of Liberal Arts and Professional Studies regulations, which are used by SAS (the School of Administrative Studies) at:

<https://www.yorku.ca/laps/sas/academic-resources/common-course-policies/>

**Deferred Final Exams:**Deferred standing may be granted to students who are unable to write their final examination at the scheduled time or to submit their outstanding course work on the last day of classes. Details can be found at <http://myacademicrecord.students.yorku.ca/deferred-standing>

DSA Form: <http://www.registrar.yorku.ca/pdf/deferred_standing_agreement.pdf>

In order to apply for deferred standing, students must register at:

[**http://sas-app.laps.yorku.ca**](http://sas-app.laps.yorku.ca)

Followed by handing in a completed original Deferred Standing Agreement (DSA) form and supporting documentation directly to the main office of the School of Administrative Studies (282 Atkinson) and add your ticket number to the DSA form.  The DSA and supporting documentation must be submitted no later than five (5) business days from the date of the exam.  These requests will be considered on their merit and decisions will be made available by logging into the above-mentioned link. No individualized communication will be sent by the School to the students (no letter or e-mails).

**IMPORTANT NOTE: Any request for deferred standing on medical grounds must comply with University regulations. At the time of writing of this outline, the requirement for APS forms had been suspended due to COVID-19. If it resumes, the University will inform you of such resumption, and you would include an Attending Physician’s Statement form; a “Doctor’s Note” will not be accepted**.

Students with approved DSA will be able to write their deferred examination during the School's deferred examination period. **Deferred exams might take place during the regular exams period or in subsequent weeks depending on the course**; precise dates are known when the Office of the Registrar publishes the final exam schedule of the term. No further extensions of deferred exams shall be granted. The format and covered content of the deferred examination may be different from that of the originally scheduled examination. The deferred exam may be closed book, cumulative and comprehensive and may include all subjects/topics of the textbook whether they have been covered in class or not.

 **Academic Honesty/Integrity**: The Faculty of Liberal Arts and Professional Studies considers breaches of the Senate Policy on Academic Honesty to be serious matters. The Senate Policy on Academic Honesty is an affirmation and clarification for members of the University of the general obligation to maintain the highest standards of academic honesty. As a clear sense of academic honesty and responsibility is fundamental to good scholarship, the policy recognizes the general responsibility of all faculty members to foster acceptable standards of academic conduct and of the student to be mindful of and abide by such standards. Suspected breaches of academic honesty will be investigated and charges shall be laid if reasonable and probable grounds exist.

Students should review the York Academic Honesty policy for themselves at:

<http://www.yorku.ca/secretariat/policies/document.php?document=69>

Students might also wish to review the interactive on-line Tutorial for students on academic integrity, at:<https://spark.library.yorku.ca/academic-integrity-what-is-academic-integrity/>

**Grading Scheme and Feedback Policy:**The grading scheme (i.e. kinds and weights of assignments, essays, exams, etc.) shall be announced, and be available in writing, within the first two weeks of class, and, under normal circumstances, graded feedback worth at least 15% of the final grade for Fall, Winter or Summer Term, and 30% for ‘full year’ courses offered in the Fall/Winter Term be received by students in all courses prior to the final withdrawal date from a course without receiving a grade, with the following exceptions:

*Note: Under unusual and/or unforeseeable circumstances which disrupt the academic norm, instructors are expected to provide grading schemes and academic feedback in the spirit of these regulations, as soon as possible.* For more information on the Grading Scheme and Feedback Policy, please visit: <http://www.yorku.ca/univsec/policies/document.php?document=86>

**In-Class Tests and Exams - the 20% Rule**: For all Undergraduate courses, except those which regularly meet on Friday evening or on a weekend, tests or exams worth more than 20% will not be held in the two weeks prior to the beginning of the official examination period. For further information on the 20% Rule, please visit: <http://secretariat-policies.info.yorku.ca/policies/limits-on-the-worth-of-examinations-in-the-final-classes-of-a-term-policy/>

**Reappraisals**: Students may, with sufficient academic grounds, request that a final grade in a course be reappraised (which may mean the review of specific pieces of tangible work). Non-academic grounds are not relevant for grade reappraisals; in such cases, students are advised to petition to their home Faculty. Students are normally expected to first contact the course director to discuss the grade received and to request that their tangible work be reviewed. Tangible work may include written, graphic, digitized, modeled, video recording or audio recording formats, but not oral work.  Students need to be aware that a request for a grade reappraisal may result in the original grade being raised, lowered or confirmed. For reappraisal procedures and information, please visit the Office of the Registrar site at: <http://myacademicrecord.students.yorku.ca/grade-reappraisal-policy>

**Accommodation Procedures:** LA&PS students who have experienced a misfortune or who are too ill to attend the final examination in an ADMS course should not attempt to do so; they must pursue deferred standing. Other students should contact their home Faculty for information. For further information, please visit: <http://ds.info.yorku.ca/academic-support-accomodations/>

**Religious Accommodation**: York University is committed to respecting the religious beliefs and practices of all members of the community and making accommodations for observances of special significance to adherents. For more information on religious accommodation, please visit:
<https://w2prod.sis.yorku.ca/Apps/WebObjects/cdm.woa/wa/regobs>

**Academic Accommodation for Students with Disabilities (Senate Policy)**

The nature and extent of accommodations shall be consistent with and supportive of the integrity of the curriculum and of the academic standards of programs or courses. Provided that students have given sufficient notice about their accommodation needs, instructors shall take reasonable steps to accommodate these needs in a manner consistent with the guidelines established hereunder. For more information, please visit the Student Accessibility Services (formerly known as Counselling and Disability Services) website at [https://accessibility.students.yorku.ca](https://accessibility.students.yorku.ca/)

York’s disabilities offices and the Registrar’s Office work in partnership to support alternate exam and test accommodation services for students with disabilities at the Keele campus. For more information on alternate exams and tests please visit <http://www.yorku.ca/altexams/>

Please alert the Course Director as soon as possible should you require special accommodations.