THE UNIVERSITY OF MANITOBA

I.H. Asper School of Business

IDM 4050 T01 – Readings in Management
(Time Series and Regression Analysis for Management)

Regular Session: Fall

General Information

- Section: T01
- Instructor: Jeffrey Pai
- Class Room: Drake 251
- Class Time: Mon & Wed 10 am – 11:15 am
- Office Location: Drake 640
- Office Telephone: 474 6412
- E-mail: Jeffrey.Pai@ad.umanitoba.ca
- Office Hours Tue & Thu 11 am -12:00 pm or by appointment

Course Information

Course Website: To access course website, find your “D2L” page, click on the IDM 4050 course title or use the address https://umanitoba.desire2learn.com/ to log on.

Pre- or co-requisite: STAT 3400

Objectives and Content:

There are two parts of the course. The first part is based on regression analysis and includes simple linear regression, multiple regression, and general linear regression. Specifically, the following list of topics on regression analysis will be covered:
(1) Least square estimates of parameters
(2) Single linear regression
(3) Multiple linear regression
(4) Hypothesis testing and confidence intervals in linear regression models
(5) Testing of models, data analysis and appropriateness of models

The second part is focused on time series and includes smoothing and extrapolation, random walk, and various time series models. Specifically, the following list of topics on time series analysis will be covered:
(1) Linear time series models
(2) Moving average, autoregressive and/or ARIMA models
(3) Estimation, data analysis and forecasting with time series models
(4) Forecast errors and confidence intervals

**Required Reading(s):**
- *Regression Modeling with Actuarial and Financial Application* Chapter 1 – 8

**Recommended Reading(s)**
- *An Introduction to R: A Programming Environment for Data Analysis and Graphics*
- *Getting Started With the R Commander*, John Fox

### Method(s) of Evaluation

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<tr>
<th>Tests</th>
<th>Date of Test</th>
<th>Value Contributing to the Final Grade</th>
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<tbody>
<tr>
<td>1.</td>
<td>Oct 7</td>
<td>20%</td>
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<tr>
<td>2.</td>
<td>Nov 4</td>
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<td>3.</td>
<td>Dec 4</td>
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<table>
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<tr>
<th>Assignments</th>
<th>Due Date</th>
<th>Value Contributing to the Final Grade</th>
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<tr>
<td>1.</td>
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<td>2.</td>
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Assignments must be individual work. They should be generic and comprehensive. Any R output without your own interpretation will not be graded. Tests are to be held in the lab. All calculations must be carried out in R. Explanation to results may be either typed or hand written. Student name and number must be typed on the first page, and signature is required on every page.

Anyone found in violation of test rules will be treated as academic dishonesty and will be reported to the Faculty of Management.

The **Grading Scale** for this course is as follows:

- A+ (=90%)
- B+ (=75%)
- C+ (=65%)
- D (=50%)
- A (=80%)
- B (=70%)
- C (=60%)
- F (<50%)

### University Accreditation Program

The Validation of Education of Experience (VEE) requirement is jointly sponsored by the Society of Actuaries (SOA), Casualty Actuarial Society (CAS) and Canadian Institute of Actuaries (CIA). This course (with a grade B or higher) meets the requirement of VEE Applied Statistics Methods with approved code 3-8049-0552-1-2014.
Academic Integrity

It is critical to the reputation of the I. H. Asper School of Business and of our degrees that everyone associated with our faculty behaves with the highest academic integrity. As the faculty that helps create business and government leaders, we have a special obligation to ensure that our ethical standards are beyond reproach. Any dishonesty in our academic transactions violates this trust. Page 28 of the University of Manitoba General Calendar addresses the issue of academic dishonesty under the heading "Plagiarism and Cheating". Specifically, acts of academic dishonesty include, but are not limited to:

- using the exact words of a published or unpublished author without quotation marks and without referencing the source of these words
- duplicating a table, graph or diagram, in whole or in part, without referencing the source
- paraphrasing the conceptual framework, research design, interpretation, or any other ideas of another person, whether written or verbal (e.g., personal communications, ideas from a verbal presentation) without referencing the source
- copying the answers of another student in any test, examination, or take-home assignment
- providing answers to another student in any test, examination, or take-home assignment
- taking any unauthorized materials into an examination or term test (e.g., crib notes)
- using any unauthorized materials in an examination or term test (e.g., crib notes)
- impersonating another student or allowing another person to impersonate oneself for the purpose of submitting academic work or writing any test or examination
- stealing or mutilating library materials
- accessing tests prior to the time and date of the sitting
- changing name or answer(s) on a test after that test has been graded and returned
- submitting the same paper or portions thereof for more than one assignment, without discussions with the instructors involved.

Group Projects and Group Work
Many courses in the I. H. Asper School of Business require group projects. Students should be aware that group projects are subject to the same rules regarding academic dishonesty. Should a violation occur, group members are jointly accountable unless the violation can be attributed to a specific individual(s).

Some courses, while not requiring group projects, encourage students to work together in groups (or at least do not prohibit it) before submitting individual assignments. Students are encouraged to discuss this issue as it relates to academic integrity with their instructor to avoid violating this policy.

In the I. H. Asper School of Business all suspected cases of academic dishonesty are passed to the Dean's office in order to ensure consistency of treatment.