UNIVERSITY OF ALBERTA
ALBERTA SCHOOL OF BUSINESS

Department of Accounting and Business Analytics

MGTSC405
Forecasting for Planners/Managers
Syllabus - Fall 2022

Lectures: Tuesday and Thursday, 2:00 – 3:20 PM in BUS B-09 (1st lecture on September 1st)

Labs: most **Tuesdays** are lab sessions in B-28. The details are on eClass.

Instructor: Dr. Mohua Podder   **Office:** BUS 4-21H

Phone: (780) 492-0393   **Email:** mohua1@ualberta.ca

Office hours: 10 AM – 12 Noon on Wednesdays (starting September 14th)

TA: Jiaqi Wang, BCom

COVID Rules and Regulations (subject to frequent updates)
In classrooms and offices, masks are recommended. Please follow the University Health Safety for most updated rules and regulations.

Course description
This course is concerned with statistical methods that predict the uncertain nature of business trends in an effort to help managers make better decisions and plans. Such methods often involve the study of historical data and the manipulation of these data to search for patterns that can be effectively extrapolated to produce forecasts. This is a business statistics course that covers all aspects of business forecasting with an emphasis on intuitive concepts and applications. Topics covered include judgmental forecasting methods, time-series decomposition, exponential smoothing methods, Box-Jenkins methods, and linear regression. Because forecasting is best taught through practice, the course contains numerous real, relevant, business case studies and examples that students can use to practice the application of concepts. MGTSC 312 and OM 352 or equivalent courses are prerequisites.

Learning goals
This course primarily helps students acquire knowledge by introducing them to topics in Time Series Analysis. This course secondarily teaches students to think critically about statistical models and to understand their usefulness and limitations. At the end of this course, students will be able to understand and apply concepts and theories from Business forecasting and to work effectively in diverse teams in order to achieve organizational goals.

Text
Here are some books that supplement class discussion (optional, though recommended if you are having any difficulty with the material or for further reading) and are available at Rutherford library:
[1] Business Forecasting with ForecastX, sixth edition by J. Holton Wilson, Barry Keating

[2] Business Forecasting, ninth edition by John E. Hanke, Dean W. Wichern
[3] Forecasting: Methods and Applications, third edition by Spyros Makridakis, Steven C. Wheelwright, Rob J. Hyndman
[4] Practical Business Forecasting by Michael K. Evans

Text book purchasing options:

- Bookstore URL: https://bookstore.ualberta.ca/booklist.aspx
- McGraw Hill Purchasing URL: https://www.mheducation.ca/ise-forecasting-and-predictive-analytics-with-forecast-x-tm-9781260085235-can-group

Software

To assist students' understanding of the materials, we use Microsoft Excel and the ForecastX add-in (the student version of ForecastX is available in textbook [1]). I will provide a basic instruction of ForecastX in the lab, but students must be comfortable in data manipulating with Excel prior to participating in the course. Note that this is not a course to learn how to use a particular package tool and students are encouraged to use any non-automatic software which has equivalent or more functions to present their work.

eClass: You will be able to obtain materials via eClass at https://eclass.srv.ualberta.ca/

Other than information provided in class, eClass will be where announcements and other resources regarding the course will be made available. Please check this site regularly and/or make sure your settings in eClass will send you emails when there are updates.

Office Hours: It is important that you attend office hours if you have problems with the assignments or the course material.

E-mail policy: I will endeavor to reply to your e-mails within two business days, provided the answer to your question is not in the syllabus or schedule. If you ask content questions, please include all needed information in the email itself (references are not "included"). If you have detailed content questions, which often require multiple rounds of clarification and restatement, please ask during office hours.

COURSE ACTIVITIES AND EVALUATION

Students' achievements will be assessed based on their performance on three theoretical quizzes and three computational assignments. Extra credit class participation up to 10% of the course grade may be awarded based on pro-social behaviors such as helping other students, pointing out errors in content, or sharing pertinent outside information with the class. Other than this extra credit, the evaluation weights are as follows (in chronological order):

Assessment	Dates	Weight
Quiz 1	September 27	15%
Assignment 1	September 29	10%
Quiz 2	November 1	20%
Assignment 2	November 3	20%
Assignment 3	December 1	10%
Quiz 3	December 6	25%
Total		**100%**

Quizzes are held in lab (designed to take approximately one hour), and we will be using combination

of computerized and paper-based exams. You will be allowed to have one piece of 8.5x11 sheet of paper with your own handwriting on both sides for each quiz, but should prepare for a closed-everything quiz, and use the crib sheet as backup.

No practice quizzes will be handed out, however, <u>hints will be given throughout the course</u>.
Any quiz missed without justifiable and verifiable reason will have a mark of zero and it will be computed in the final average. In case you miss a quiz for justifiable reasons, its weight will be reduced to 0% and other quizzes weight will be readjusted accordingly. Note that since the dates are set in advance, your absence on quizzes may incur some penalty. Missing all three quizzes will require a makeup exam at the time of the regularly scheduled final exam (which may instead be take-home). IF that is also missed for a justifiable reason, the makeup will be held at 0800 the last Friday before reading week, the following semester.
The computational assignments are assigned approximately two or three weeks before the due date. Students are expected to complete them in groups of four students which will be picked by the instructor, with the information you provided in the Survey (will be available after the 1st lecture) as reference. They will be handed in electronically (using the University Online Assessment tool). Late assignments will not be accepted.

Course Outline (a schedule will be provided in a separate document):
0: Introduction to Forecasting
1: Forecast Errors
2: Review of Statistical Inference
3: Time Series Data Patterns and Time Series Decomposition
4: Smoothing Techniques
5: Box-Jenkins Methodology
6: Forecasting with Regression Models
7: Combining Forecasts (Ensemble methods)

Other policy announcements:
The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Code of Student Behavior (online at https://policiesonline.ualberta.ca/PoliciesProcedures/Pages/DispPol.aspx?PID=101) and avoid any behavior which could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

Policy about course outlines can be found in Course Requirements, Evaluation Procedures and Grading of the University Calendar at http://calendar.ualberta.ca/content.php?catoid=28&navoid=6961#courserequirements,-evaluation-procedures-and-grading

Audio or video recording, digital or otherwise, of lectures, labs, seminars or any other teaching environment by students is allowed only with the prior written consent of the instructor or as a part of an approved accommodation plan. Student or instructor content, digital or otherwise, created and/or used within the context of the course is to be used solely for personal study, and is not to be used or distributed for any other purpose without prior written consent from the content author(s).

The content of this syllabus is to be considered valid unless didactical or other compelling reasons will lead the instructor to modify it. In case of a change in rules, a communication will be issued to students by email and, if necessary, a revised version of the syllabus will be posted.