

THE UNIVERSITY OF TEXAS AT TYLER
SOULES COLLEGE OF BUSINESS
Spring 2023

COURSE NUMBER: FINA 4357.001

COURSE TITLE: Business Forecasting

INSTRUCTOR: Dr. Vivek Pandey

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OFFICE HOURS: Tuesday 2 - 4 pm & Thursday 3 - 4 pm. Other times by appointment.

CLASS MEETING & LOCATION: Mondays & Wednesdays, 2:30 – 3:55 pm, COB 121

TEACHING METHOD: Lectures, class discussions, programming and analytical exercises

NOTE: THIS COURSE ONLY USES OPEN EDUCATIONAL RESOURCES WHICH ARE AVAILIABLE TO STUDENTS AT NO COST

REQUIRED TEXT: Forecasting: Principles and Practice, 2nd Edition, By Rob J Hyndman and George Athanasopoulos, Monash University, Australia. An electronic version of the textbook is available free of charge at <https://otexts.com/fpp2/> Additionally, if you would like a printed copy, you can purchase one from Amazon.com. To be clear, a printed copy of the book is not required for this class, you should only buy it if you feel that online access to the free e-book will be insufficient for your needs.

REQUIRED

ACCESSORIES: The statistical software we will use in this class is *R*, freely available from <https://www.r-project.org/> and *R-Studio*, also available for free at <https://www.rstudio.com>. We will also use [Datacamp](#) to access online courses for learning the essentials of R and forecasting with R. This resource is provided free of charge for students in this course in conjunction with Datacamp for Classroom initiative.

COURSE

DESCRIPTION: This course is dedicated to teaching students tools in econometrics that are especially useful in forecasting time series data, such as stock values, future energy prices, unemployment rate, GDP, etc.

LEARNING OBJECTIVES: Upon completion of this course, the student will learn the essentials of and demonstrate proficiency in:

- Graphical examination and visualization of time series data
- Decomposition of Times Series into trend, seasonal, cyclical, and irregular components
- Analyzing and forecasting the dynamics of business and economic data
- Evaluation of the forecasting accuracy for competing forecasting methods
- Using statistical analysis software (*R* and *R-Studio*) for data analysis and forecasts
- Making subjective forecast adjustments based on new information

CONTENT OUTLINE:

Week / Date	Ch.	Topic
Jan 9, 11	1	Getting Started – Introduction to Forecasting
Jan 16		<i>Martin Luther King Day</i>
Jan 18		<i>Self-introduction due on Discussion Board</i>
Jan 18, 23	2	Time Series Graphics
Jan 25		Practical Exercise: Running company/stock filters in EIKON
Jan 30, Feb 1	3	The Forecaster’s Toolbox
Feb 1		<i>Practical Assignment 1 due</i>
Feb 6		<i>Datacamp Assignment 1 due: Intro to R for Finance</i>
Feb 6		Review for Exam 1
Feb 8		Exam 1
Feb 13		Lab Exercise for importing and merging data in R
Feb 15	4	Judgemental Forecasts
Feb 20		<i>Datacamp Assignment 2 due: Intro to Data Visualization ...</i>
Feb 20		Lab Exercise for obtaining financial markets data and optimizing portfolios
Feb 22, 27, Mar 1	5	Time Series Regression Models
Mar 6		Practical Exercise: Forecasting stock returns using the market model
Mar 13-18		<i>Spring Break, Aloha!</i>

Mar 20		<i>Practical Assignment 2 due</i>
Mar 20, 22	7	Exponential Smoothing
Mar 22		<i>Datacamp Assignment 3 due: Time Series Analysis in R</i>
Mar 23		<i>Last day to withdraw from this course</i>
Mar 27		Review for Exam 2
Mar 29		Exam 2
Apr 3, 5	8	ARIMA Models
Apr 10		<i>Datacamp Assignment 4 due: ARIMA models in R</i>
Apr 10		Practical Exercise: Fitting and evaluating various time series models
Apr 12		Lab Exercise for non-seasonal ARIMA model
Apr 17		<i>Practical Assignment 3 due</i>
Apr 17	12	Some Practical Forecasting Issues
Apr 19		<i>Datacamp Assignment 5 due: Forecasting in R</i>
Apr 19		Review for exam 3
Apr 24 or 26		Exam 3 (Administered as per UTT final exam schedule TBA)

NOTE: This class schedule is subject to revisions by the instructor if it is deemed necessary as a responsive action to class progress and time constraints.

EVALUATION:

A student's grade for the class will be based on performance in exams, project assignments, and the level of participation in class. Below are the weights for the different components that comprise your grade in class.

Component	Weight
Exams	45%
Datacamp Assignments	35%
Practical Exercise Assignments	15%
Class participation	5%

GRADING SCALE

A standard 10-point scale is utilized to assign grades in class. The following is the scheme used to

assign letter grades based on the overall weighted score received by a student from the various activities described above.

Weighted Total Score	Grade
Greater than 90%	A
80% to less than 90%	B
70% to less than 80%	C
60% to less than 70%	D
Less than 60%	F

COVID 19 Policy:

It is important to take the necessary precautions to ensure a healthy and successful year. UT Tyler continues to urge you to protect yourselves against the flu, COVID and any new threats that may be developing. Be diligent about preventive measures such as washing hands, covering sneezes/coughs, social distancing and vaccinations, which have proven to be successful in slowing the spread of viruses. Encourage those who don't feel well to stay home, and if they show symptoms, ask them to get tested for the flu or COVID. Self-isolation is important to reduce exposure ([CDC quarantine/isolation guidelines](#)). Please work with your faculty members to maintain coursework and please consult [existing campus resources](#) for support.

OTHER UNIVERSITY POLICIES:

Please see the appropriate links from the Syllabus page in your Canvas course to access information regarding policies and resources made available to you on the web by the University.