

**THE UNIVERSITY OF TEXAS AT TYLER**  
**SOULES COLLEGE OF BUSINESS**  
**Fall 2021**

**COURSE NUMBER:** FINA 4357.001

**COURSE TITLE:** Business Forecasting

**INSTRUCTOR:** Dr. Vivek Pandey

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**OFFICE HOURS:** Tuesdays and Thursdays, 2 – 3 pm & Wednesdays, 2 – 4 pm. Other times by appointment.

**CLASS MEETING & LOCATION:** Tuesdays & Thursdays, 3:35 – 4:55 pm, SCOB 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
Aug 24, 26	1	<b>Getting Started – Introduction to Forecasting</b>
Aug 31		<i>Self-introduction due on Discussion Board</i>
Aug 31, Sep 2	2	<b>Time Series Graphics</b>
Sep 6		<b><i>Celebrate Labor Day</i></b>
Sep 7		Practical Exercise: Running company/stock filters in EIKON
Sep 9, 14	3	<b>The Forecaster’s Toolbox</b>
Sep 14		<i>Practical Assignment 1 due</i>
Sep 16		<i>Datacamp Assignment 1 due: Intro to R for Finance</i>
Sep 16		Review for Exam 1
Sep 21		<b>Exam 1</b>
Sep 23		Lab Exercise for importing and merging data in R
Sep 28, 30	4	<b>Judgemental Forecasts</b>
Oct 5		<i>Datacamp Assignment 2 due: Data Visualization in R</i>
Oct 5		Lab Exercise for obtaining financial markets data and optimizing portfolios
Oct 7, 12, 14	5	<b>Time Series Regression Models</b>
Oct 19		Practical Exercise: Forecasting stock returns using the market model
Oct 21, 26	7	<b>Exponential Smoothing</b>

Oct 26		<i>Practical Assignment 2 due</i>
Oct 28		<i>Datacamp Assignment 3 due: Time Series Analysis in R</i>
Oct 28		Review for Exam 2
Nov 1		<b><i>Last day to withdraw from this course</i></b>
Nov 2		<b>Exam 2</b>
Nov 4		<b><i>Career Success Seminar</i></b>
Nov 9, 11	8	<b>ARIMA Models</b>
Nov 16		<i>Datacamp Assignment 4 due: ARIMA models in R</i>
Nov 16		Practical Exercise: Fitting and evaluating various time series models
Nov 18		Lab Exercise for non-seasonal ARIMA model
Nov 22-27		<b><i>Thanksgiving Break</i></b>
Nov 30		<i>Practical Assignment 3 due</i>
Nov 30	12	<b>Some Practical Forecasting Issues</b>
Dec 2		Datacamp Assignment 5 due: Forecasting in R
Dec 2		Review for exam 3
Dec 9		<b>Exam 3</b>

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*NOTE: Please note that all homework assignments due at the beginning of the class period on the assignment due date. You must have your assignment completed and submitted in Canvas before class begins. Any assignment submitted after class begins will be considered late.*

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#### **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.

<b>Component</b>	<b>Weight</b>
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