THE UNIVERSITY OF TEXAS AT TYLER
SOULES COLLEGE OF BUSINESS
Spring 2026

COURSE NUMBER: FINA 4357

COURSE TITLE: Forecasting

INSTRUCTOR: Dr. Vivek Pandey

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OFFICE HOURS: Tuesday: 10 am – 12 noon; 2 – 5 pm
Wednesday: 10 am – 12 noon;
Thursday: 2 – 5 pm
Other times by appointment.

CLASS MEETING & LOCATION: Mondays 2:30 – 3:55 pm + Online (Hybrid class)

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

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

REQUIRED TEXT: Forecasting: Principles and Practice, 2nd Edition, By Rob J Hyndman and George Athanasoupoulos, 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, company fundamentals, macroeconomic measures, etc. This course will

use a flipped model where pre-recorded class lectures are made available online with very few mandatory in-person meetings. In-person class meetings will be used for hands-on practical exercises as well as in-class exams only.

COURSE OBJECTIVES: Upon completion of this course:
- Students will graphically visualize time series data
- Students will decompose time series patterns into trend, seasonal, cyclical, and irregular components
- Students will employ econometric methods for forecasting data
- Students will evaluate the accuracy of competing forecasting methods
- Students will make subjective forecast adjustments based on new information

CONTENT OUTLINE:

Week / Date	Topic / Activity
Weeks 1-3	Chapters 1 & 2: Introduction to Forecasting + Time Series Graphics (lecture and notes posted online)
Jan 12	Class meeting – Intro + review of data visualization
Jan 19	*Labor Day Holiday!*
Jan 26	*Self-introduction due on Discussion Board*
Jan 26	*Datacamp Assignment 1 due: Intro to R for Finance*
Jan 26	Class meeting - Practical Exercise 1- Running stock filters in Refinitiv Workspace
Weeks 4-6	Chapter 3: The Forecaster's Toolbox (lecture and notes posted online)
Feb 2	*Practical Assignment 1 due*
Feb 2	Class meeting – review of tools for forecasting
Feb 9	*Datacamp Assignment 2 due: Intro to Data Visualization …*
Feb 9	Class meeting: Review for Exam 1
Feb 16	**Exam 1 –** administered in-class
Week 7	Chapter 4: Judgmental Forecasts (lecture and notes posted online)
Feb 23	Class meeting: Lab Exercises - Importing and merging data in R + Obtaining financial markets data and optimizing portfolios
Week 8	Chapter 5: Time Series Regression Models (lecture and notes posted online)
March 2	Class meeting – review of regression models
Mar 9-13	*Spring Break - Aloha*

Weeks 9-11	Chapter 7: Exponential Smoothing (lecture and notes posted online)
Mar 16	*Datacamp Assignment 3 due: Time Series Analysis in R*
Mar 16	Class meeting**:** Review of Exponential Smoothing + Practical Exercise 2 - Forecasting stock returns using the market model
Mar 23	*Practical Assignment 2 due*
Mar 23	Class meeting – Review for Exam 2
Mar 30	***Last day to withdraw from this course***
Mar 30	**Exam 2 –** administered in-class
Weeks 12-13	Chapter 8: ARIMA Models (lecture and notes posted online)
Apr 6	Class meeting – review of ARIMA models
Apr 13	*Datacamp Assignment 4 due: ARIMA models in R*
Apr 13	Class meeting**:** Lab Exercise for non-seasonal ARIMA model + Practical Exercise 3 - Fitting and evaluating various time series models
Apr 13	*Practical Assignment 3 due*
Weeks 14-15	Chapter 12: Some Practical Forecasting Issues (lecture and notes posted online)
Apr 20	Class meeting**:** Review for exam 3
Apr 22	*Datacamp Assignment 5 due: Forecasting in R*
Apr 27 or 29	**Exam 3 –** administered in-class

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	30%
Practical Assignments	20%
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
90% or greater	A
80% to less than 90%	B
70% to less than 80%	C
60% to less than 70%	D
Less than 60%	F

ARTIFICIAL INTELLIGENCE POLICY

UT Tyler is committed to exploring and using artificial intelligence (AI) tools as appropriate for the discipline and task undertaken. We encourage discussing AI tools' ethical, societal, philosophical, and disciplinary implications. All uses of AI should be acknowledged as this aligns with our commitment to honor and integrity, as noted in UT Tyler's Honor Code. Faculty and students must not use protected information, data, or copyrighted materials when using any AI tool. Additionally, users should be aware that AI tools rely on predictive models to generate content that may appear correct but is sometimes shown to be incomplete, inaccurate, taken without attribution from other sources, and/or biased. Consequently, an AI tool should not be considered a substitute for traditional approaches to research. You are ultimately responsible for the quality and content of the information you submit. Misusing AI tools that violate the guidelines specified for this course (see below) is considered a breach of academic integrity. The student will be subject to disciplinary actions as outlined in UT Tyler's Academic Integrity Policy.

For this course, **AI is permitted only for specific assignments or situations, and appropriate acknowledgment is required.**

Most assignments in this course will permit using artificial intelligence (AI) tools, such as ChatGPT or Copilot. When AI use is permissible, it will be in the assignment description, and all use of AI must be appropriately acknowledged and cited. When using AI tools for assignments, add an appendix showing (a) the entire exchange (e.g., prompts used), highlighting the most relevant sections; (b) a description of precisely which AI tools were used, (c) an explanation of how the AI tools were used (e.g. to generate ideas, elements of text, etc.); and (d) an account of why AI tools were used (e.g. to save time, to surmount writer's block, to stimulate thinking, to experiment for fun, etc.). Students shall not use AI tools during in-class examinations or assignments unless explicitly permitted and instructed to do so.

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.