

**THE UNIVERSITY OF TEXAS AT TYLER**  
**SOULES COLLEGE OF BUSINESS**  
**Fall 2025**

**COURSE NUMBER:** FINA 4357 / FINA 5357

**COURSE TITLE:** Forecasting

**INSTRUCTOR:** Dr. Vivek Pandey

**OFFICE & E-MAIL:** Location: COB 350.01; Phone: (903) 566-7224; Email: [vpandey@uttyler.edu](mailto:vpandey@uttyler.edu)

**OFFICE HOURS:** Tuesday: 2:00 – 5:00 pm.  
Wednesday: 10 am – 12 noon; 1:30 – 4:30 pm  
Thursday: 10 am – 12 noon  
Other times by appointment.

**CLASS MEETING & LOCATION:** Tuesdays 11:00 am – 12:20 pm & occasional Thursdays in COB 121 + Online (Hybrid class)

**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. 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
- Students will be able to prepare and present a well-researched forecasting report (*FINA 5357 students only*)

**CONTENT OUTLINE:**

Week / Date	Topic / Activity
Weeks 1-2	Chapters 1 & 2: Introduction to Forecasting + Time Series Graphics (lecture and notes posted online)
Aug 26	Class meeting – Intro + review of data visualization
Sep 1	<b><i>Labor Day Holiday!</i></b>
Sep 2	<i>Self-introduction due on Discussion Board</i>
Sep 2	Class meeting - Practical Exercise 1- Running stock filters in Refinitiv Workspace
Weeks 3-5	Chapter 3: The Forecaster's Toolbox (lecture and notes posted online)
Sep 9	<i>Practical Assignment 1 due</i>
Sep 9	<i>Graduate Research Concept due (FINA 5357 students only)</i>
Sep 9	Class meeting – review of tools for forecasting
Sep 16	<i>Datacamp Assignment 1 due: Intro to R for Finance</i>
Sep 16	Class meeting: Review for Exam 1
Sep 23	<b>Exam 1 – administered in-class</b>
Week 6	Chapter 4: Judgmental Forecasts (lecture and notes posted online)
Sep 30	<i>Datacamp Assignment 2 due: Intro to Data Visualization ...</i>
Sep 30	Class meeting: Lab Exercises - Importing and merging data in R + Obtaining financial markets data and optimizing portfolios

Weeks 7-8	Chapter 5: Time Series Regression Models (lecture and notes posted online)
Oct 7	<i>Graduate research paper proposals due (FINA 5357 students only)</i>
Oct 7	Class meeting – review of regression models
Oct 14	<i>Datacamp Assignment 3 due: Time Series Analysis in R</i>
Oct 14	Class meeting: Practical Exercise 2 - Forecasting stock returns using the market model.
Weeks 9-11	Chapter 7: Exponential Smoothing (lecture and notes posted online)
Oct 21	<i>Practical Assignment 2 due</i>
Oct 21	Class meeting – review of exponential smoothing
Oct 28	Class meeting: Review for Exam 2
Nov 3	<i>Last day to withdraw from this course</i>
Nov 4	<b>Exam 2 – administered in-class</b>
Weeks 12-13	Chapter 8: ARIMA Models (lecture and notes posted online)
Nov 11	Class meeting – review of ARIMA models
Nov 11	<i>Datacamp Assignment 4 due: ARIMA models in R</i>
Nov 18	Class meeting: Lab Exercise for non-seasonal ARIMA model + Practical Exercise 3 - Fitting and evaluating various time series models
Nov 24-28	<b>Thanksgiving Holidays! Gobble! Gobble!</b>
Weeks 14-15	Chapter 12: Some Practical Forecasting Issues (lecture and notes posted online)
Dec 2	<i>Practical Assignment 3 due</i>
Dec 2	Class meeting: Research presentations ( <b>Mandatory for FINA 5357 students only</b> )
Dec 4	<i>Datacamp Assignment 5 due: Forecasting in R</i>
Dec 4	Class meeting: Review for exam 3
Dec 7	<i>Graduate Research Paper due (for FINA 5357 students only)</i>
Dec 9	<b>Exam 3 – administered in-class</b>

---

*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.

### **FINA 4357 students**

Component	Weight
Exams	45%
Datacamp Assignments	30%
Practical Assignments	20%
Class participation	5%

### **FINA 5357 students**

Component	Weight
Exams	45%
Datacamp Assignments	20%
Graduate Research Paper	20%
Practical Assignments	12%
Class participation	3%

## **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.