

Course Syllabus

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FUNDAMENTAL METHOD OF FORECASTING

Course Information

This course is offered collaboratively through the UW MBA Consortium. Campus specific course information is listed below:

UW-Eau Claire: MBA 754 - Fundamental Methods of Forecasting

UW-Oshkosh: MBA 769

UW-Lacrosse: BUS 700

Credit Hours: 1.0

Course Term: Winter 2021

Delivery Mode: Online

Instructor Information

Name: Dr. Fred Kolb

Home campus: UW-Eau Claire

Email: KOLBFR@uwec.edu

Course Description

The ability to forecast data which becomes available at regular intervals is very important in the business environment. With the power of modern computers, it is possible to carry out effective short term (one or two periods ahead) forecasts using methods studied in the context of a short course. The course will be very heavily weighted toward applied work rather than the mathematical theory behind the methods. Students will have a portfolio of forecasts at the end of the course to demonstrate competence.

Learning Outcomes

The skill set which this course is intended to provide to students focuses on procedures to recognize patterns in data and exploit those patterns to make short-term forecasts. In some cases the patterns are between variables such as advertising and sales. In other cases the patterns are based on the history of a single variable as its values emerge through time. In this second case attention might be

given to sales of a product through time without consideration of causal factors—instead, trend and seasonality being of high importance.

The econometric/forecasting software EViews is used in this course in order to capture patterns and make use of those patterns to create forecasts. Other software does the same. EViews has been selected here because (1) it offers a low cost (or even free) student version, (2) has good graphics, (3) has an outstanding help feature which includes many examples, and (4) is very user friendly. Having all students use the same software makes it possible to provide step-by-step videos to make the learning as efficient as possible. For those students who wish to focus on the use of a software already well-known to them (such as Excel), it is fine to use that software, but all output provided by EViews in the “model assignments” should also be presented in the output from the alternate software being used. Of course it will not be an exact match but differences should be minor so that the student can be confident that she/he will be able to do the forecasting procedures on their own once the course is over.

With the above in mind, students through completion of the assignments will:

- Use EViews to generate a scatter diagram with a fitted line, a correlation coefficient output, a regression output, a line graph, and a correlogram
- Use EViews to determine whether data is stationary or nonstationary
- Use EViews to use moving averages, including double moving averages, measures of fit, and exponential smoothing models
- Use EViews to generate simple models that incorporate trend and seasonal adjustment, a simple linear regression model, including regression steps/output, a simple linear regression models with a transformation of an independent variable, and a multiple independent linear regression model
- Use EViews to forecast unadjusted level of new housing starts and compare to known data.

Required Course Materials and Instructor's Objectives

Textbook: *Business Forecasting*, 9th by John E. Hanke and Dean W. Wichern. Prentice-Hall. ISBN-13: 978-0-13-230120-6

Articles: Required articles (if applicable) are linked within their respective units.

Technology requirements: EViews University Version 11 (see note below)

My goal is to provide you with a solid introduction to forecasting methods within a rather limited time frame of three weeks and to provide you with both the confidence and tools to enable you to continue developing your mastery of forecasting methods **after the course is complete**.

In addition to an excellent textbook (*Business Forecasting*, 9th by John E. Hanke and Dean W. Wichern. Prentice-Hall. ISBN-13: 978-0-13-230120-6) we will also be using professional econometric software (EViews University Version 11 [Link](#)) The purchase price for the EViews is \$49.95 and is by download.

An option with EViews 11 is a University Version LITE. That is free, but does have some limitations--the most restrictive is not being able to save files. I recommend that you give the LITE version a try. This time of year (OK pretty much ANY time of year) saving some money can be advantageous!! The download is at the same link as given above. The probability that the LITE version will work for you will be higher if you are able to complete an assignment in one session or if you can simply leave EViews open. EViews 11 became available recently. The videos for the course were made using version 9, but it difference will not cause a problem.

I have included for you the data for all the (1) textbook examples, (2) textbook problems, and (3) textbook cases in Excel format as well as the solutions manual for all the text problems and cases. With that set of resources and the skills acquired during the course, you should be in good shape if you wish to do serious forecasting in the future. **Note that the textbook is available in ebook format.** There is

both a 6-months option and a non-expiring option at this site. [Order ebook Here.](#) Again you may need to right click to get to website from the link.

Although the videos and instructions for the course assume you will be using EViews, as noted above, you may use different software to complete the course requirements if you prefer. I do recommend EViews because it is easy to use, and many students have commented about how happy they are to add EViews to their skills toolbox, but the choice is yours. Please note that I cannot provide support for any other software.

Course Topical Outline

This course is organized into the following units:

- Assignment 1 Introduction to use of EViews, graphing, line fitting, and correlation
- Assignment 2 Introduction to use of correlograms for pattern identification
- Assignment 3 Using correlograms to evaluate stationarity or nonstationarity
- Assignment 4 Moving average models
- Assignment 5 Exponential and Holt-Winters seasonal smoothing methods
- Assignment 6 Trend and seasonality
- Assignment 7 Trend and seasonality (part 2)
- Assignment 8 Simple (one variable) econometric/causal model
- Assignment 9 Transformation of variables and resulting regression output
- Assignment 10 Introduction to forecasting with a multiple regression model
- Assignment 11 Forecasting demand for chicken with a multiple regression model
- Assignment 12 Forecasting US monthly housing starts

Assignments and Activities

I have structured the course so that you can work **very independently** in terms of schedule. I know that there are significant demands on your time, and my hope is that the flexibility built into the course will enable you to meet the course obligations while you continue to meet your other obligations.

I have constructed the course so that each week there are four assignments. It is OK with me if you use the preview week to get off to an early start. The assignments are tied to materials in the text, usually examples in the text. In total there are 12 assignments with assignments 1-10 worth 30 points each and assignments 11 and 12 worth 50 points each--for a total of 400 points.

OK, so you may be wondering how much of the text you must read for the course. The answer is "as much as you feel appropriate to understand the material that the assignments are based around." This course is a quick look to show you what is out there in forecasting. Then, AFTER the course, you can go back and focus on those methods which might fit your particular forecasting needs--including understanding forecasts presented to you. The assignments are tied to examples (and a couple problems) in the textbook so a good strategy would be to find the example in the book and then go back to the start of that section. I think that strategy is actually the most efficient--especially for a course in which students have widely differing backgrounds in statistical analysis.

For each of the assignments I have completed (under Content) a file (model submission) to show you what your assignment file should look like. For each part of assignments 1-10 there will be a screen capture video showing the steps in EViews to complete the assignment. The videos are not narrated--putting in narration makes the videos considerably longer. However, I have included narrated videos which I made for previous presentations of the course. They are fine (I thought they were masterpieces when I made them!!) but I felt that many very short videos would be more efficient (time saving) for students than a few long videos.

Assignments have soft deadlines but a firm deadline of Sunday midnight of that week for weeks 1 and 2. **For week 3 the firm deadline is Friday for assignments 9, and 10, and Sunday for assignments 11 and 12.** It is fine if you work ahead and post your assignments earlier than due. I try to keep up with assignments turned in early, but my first priority is grading the assignments due at the nearest due date. The work you turn in should be your own.

- Assignments 1-10 are worth 30 points each and Assignments 11 & 12 are worth 50 points each. Total points then equal 400.
- Completed assignments typically earn full points. If there are shortcomings in your assignments I will ask you to make improvements and you will earn full credit when those areas are corrected. Please always check your work against the model submission and make good use of the videos.
- In the past students have done fine work and the grades have reflected that. I'm expecting the same once again.

A comprehensive list of all course activities is listed in the calendar.

Final Letter Grades Scale

Letter Grade	UW-MBA Consortium and UW-Parkside	UW-Oshkosh
A	372	372
A-	360	360
B+	348	348
B	336	336
B-	320	320
C+	308	308
C	296	296
C-	280	
D+	268	
D	256	
D-	240	
F	0-239	0-295

Export Course Content

You may want to download the material to have access to beyond this course. You may download the course as HTML files or ePub files. Click the links below for those directions.

- **How do I view course content offline as an ePub file as a student?**
- **How do I view course content offline as an HTML file as a student?** (NOTE: these directions tell you to click on Modules, but you will click on **Home**)

*Wait to download the course material until after you have completed the **UW MBA Consortium Student Code of Conduct Agreement**; otherwise you will not have unlocked the course material.*

Consortium's Excused Absence Policy and Late Work Policy

An absence will be considered excused or authorized according to the following institutional policies:

1. The student's home campus policy on excused absences will apply.
 - **UW Oshkosh**
 - **UW-Parkside** (see page 31)
2. UW MBA Consortium students will follow the **UW-Eau Claire Authorized Absence Policy**.

If your absence falls into the excused absence category, please contact me as soon as possible. I may request that you provide documentation, and I may need time to make alternative assessments available to you.

Academic Conduct

To foster a productive learning environment, all students are required to accept and adhere to the Student Code of Conduct agreement in order to participate in this course.

Academic Integrity Policy

All class materials are the intellectual property of the instructor and may not be shared outside of this course (e.g., to commercial "study sites") without my permission.

Unless I specify otherwise, all work that you turn in to me should be an individual effort. The sentence structure, wording, and content for your assignments and discussions must be your original work. Academically dishonest behaviors include (but may not be limited to) the following:

- Intentionally or unintentionally presenting someone else's ideas or words as your own, either as a direct quote or paraphrased or summarized material, without the proper citation. You can cite your sources in APA format.
- Submitting work that is identical to or so similar to that of another's in its wording, sentence structure, and content that it cannot be considered original.
- Plagiarizing yourself by submitting work for evaluation in this course that was previously graded or otherwise evaluated in another course. You can cite your previous work. If you want to use your previous work, contact me first.
- Making up data or citations.
- Helping someone else engage in academically dishonest behavior, including posting course materials online.

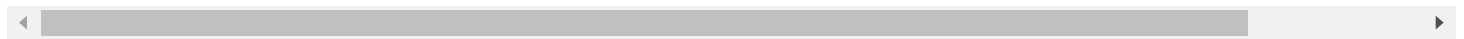
- Violating copyright laws. In some cases, citing a source is not sufficient; you also have to obtain permission from the original source for the materials you use. Likewise, if you use any materials from this course outside this course, you may need permission to use them (e.g., in your company's training manuals, publications, or style guides).
- Any form of academic dishonesty will result in a grade of "F" for the assignment and will follow the student academic disciplinary procedures as established by the UW System Board of Regents (**UWS Chapter 14**).

Accommodation for Students with Disabilities

In order to ensure that all of our students have equitable access to our online course materials, we strive to meet the guidelines set by Section 508 of the Rehabilitation Act, which requires the public to provide reasonable accommodations to individuals with disabilities when posting web-based materials. Canvas is **compliant with W3C's Web Accessibility Initiative** and with **Section 508** guidelines. Additionally, Canvas was certified as a **substantially conformant LMS** by WebAIM, a third party authority in web accessibility. If you find that course materials are not posted in a format that meets your needs, or you need testing accommodations, please contact Online Course Support at 1-715-836-6020 or email **BIZHelp@uwec.edu** and we will work with you to find a reasonable accommodation.

In Summary

We have excellent resources, a plan that has worked in the past, and a talented group of students. I forecast success!



Course Summary:

Date	Details	
Tue Jan 5, 2021	<u>Complete the Student Code of Conduct</u>	12am
	<u>Practice Assignment</u>	due by 11:59pm
Wed Jan 6, 2021	<u>Assignment 1: Chapter 2 Material</u>	due by 11:59pm
	<u>Assignment 2: Chapter 3 Material</u>	due by 11:59pm
Thu Jan 7, 2021	<u>Assignment 3: Chapter 3 Material</u>	due by 11:59pm
Fri Jan 8, 2021	<u>Assignment 4: Chapter 4 Material</u>	due by 11:59pm
Tue Jan 12, 2021	<u>Assignment 5: Chapter 4 Material</u>	due by 11:59pm
Wed Jan 13, 2021	<u>Assignment 6: Chapter 5 Material</u>	due by 11:59pm

Date	Details	
Thu Jan 14, 2021	<u>Assignment 7: Chapter 5 Material</u>	due by 11:59pm
Fri Jan 15, 2021	<u>Assignment 8: Chapter 6 Material</u>	due by 11:59pm
Tue Jan 19, 2021	<u>Assignment 9: Chapter 6 Material</u>	due by 11:59pm
Wed Jan 20, 2021	<u>Assignment 10: Chapter 7 Material</u>	due by 11:59pm
Thu Jan 21, 2021	<u>Assignment 11</u>	due by 11:59pm
Fri Jan 22, 2021	<u>Assignment 12</u>	due by 11:59pm
	<u>Final Course Evaluation</u>	to do: 11:59pm
	<u>Final Grade</u>	
	<u>Introduce Yourself--And As An Incentive, If You Do, You Will NOT Be Entered Into A Contest To Win A Photo Of Fred Standing By A Swiss Cow!!!</u>	
	<u>Workfile For Assignment 12</u>	