

AAE375
Spreadsheet Fundamentals and Applications
Fall 2017

- Instructor:** Prof. Brian W. Gould
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- Class Website:** Located within the [Learn@UW](#) system accessible from your [MyUW](#) desktop.
- Office Hours** My office hours will be held on Mondays from 9:00 – 11:00 am and on Thursdays from 5:30 – 6:30 pm. I will be available in-person *and* online on Mondays and *online only* during the Thursday session. Online access can be obtained by using the following web-conferencing [URL](#). These sessions will provide an opportunity for you to ask questions and to interact with others enrolled in the course.
- Course Description:** Having the experience of working with spreadsheets, whether EXCEL or some other system, is a positive asset when seeking out one's first professional employment.
- The learning outcomes of this 10-week on-line course will be students:
- Mastering the functionality of spreadsheets
 - Applying those skills to actual economic, business, agronomic and other applications.
 - Thinking in a logical manner when moving from real world application to spreadsheet models
 - Besides mastering the basic functions of Excel, developing graphs and charts, use of advanced functions and analytical tools, importing and manipulating data, and use of pivot-tables for data analysis, etc.
- This one credit course will run from Sept. 6th – Nov. 12th, 2017.

Spreadsheet Use: We are going use the EXCEL software system for this course. Although we are using EXCEL, the general knowledge gained by using this software is easily extendable to other spreadsheet systems such as Google's [SHEETS](#) and Apple's [NUMBERS](#) spreadsheet software.

For those of you who do not currently have EXCEL installed on your personal computer, as UW students you have free access to the Office 2016 installation files. These can be downloaded from the [UW Campus Software Library](#). My understanding is that starting with the 2016 version there is very little difference between Mac vs. Windows based versions of MS Office.¹ That said, last semester we discovered a couple of features available in the Windows version but not in the Mac version. Regardless if you are using a Windows or Mac computer, you need to install EXCEL 2016.

If you use a Mac computer I have identified a couple of options that can be used if you want to run Windows software on Mac systems.² One method is to create what is referred to as a [dual-boot system](#) to access both Windows and Mac operating systems. The DOIT Help Desk should be able to help with changing your computer's setup. A second method for running Windows apps on Mac computers is to install the [Parallels Desktop® for Mac](#) software.³ You can try this software for free. If you would like to purchase, the student version costs \$79.99. There are two student versions

¹ One feature that may not be available on MAC computer systems under Excel 2016 is EXCEL's **IFS** function. The **IFS** function checks whether one or more conditions are met and returns a value that corresponds to the first TRUE condition. The **IFS** function can replace multiple nested **IF** statements, and is much easier to read with multiple conditions. A workaround this limitation, if necessary, will be provided for those sections of the course and assignments where we ask you to use this function.

² I am sure there are other alternatives. Feel free to use whatever system works for you.

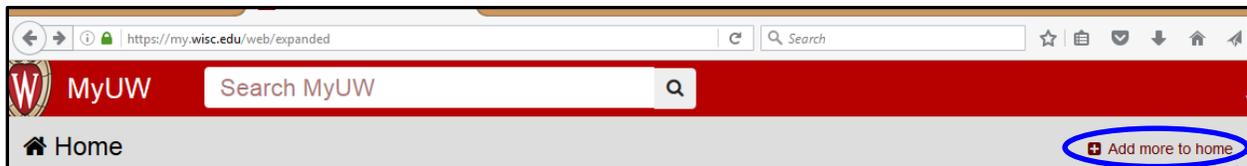
³ Being primarily a Windows user, I have not used this software and cannot provide much assistance with its use.

available: (i) *Current Version Only* which is not eligible for free upgrades or (ii) a *1-Year Subscription* that enables you to receive free upgrades to newer versions and allows for remote access to your Mac from any iOS/Android device or browser.

Lynda.com:

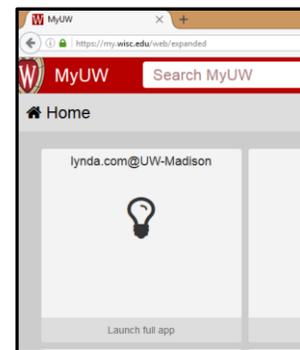
We will utilize the *Lynda.com* website as well as other on-line resources focused on the use of EXCEL for data analysis, graphical representations and report generation. For those of you not familiar with the *Lynda.com* website, it consists of an extensive collection of EXCEL (and other software) video-based tutorials.

As a member of the UW community you have unlimited access to the *Lynda.com* website (www.lynda.com). To utilize the UW site license **you must login** to your *MYUW* account and add the *Lynda.com* app to your *MyUW* webpage. You do this by clicking on the *MyUW Add more to home* button as shown in the default *MyUW* front-page below:



After you have added the *Lynda.com* app, click on the *Lynda.com* icon on your *MyUW* webpage.

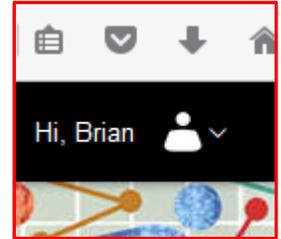
Warning: Do not go directly to www.lynda.com. To access the AAE375 video playlists, you **must** access *Lynda.com* from within your *MyUW* page. Once you click on the *Lynda.com* icon from within *MyUW*, you should be directed to a login form where you input your UW NetID information. For additional information refer to this [DoIt Knowledgebase document](#) contains a series of questions/answers concerning how to access *Lynda.com*. For a general overview of the



Lynda.com website, access the short video [How to Use Lynda.com](#) once you have logged into the *Lynda.com* website.

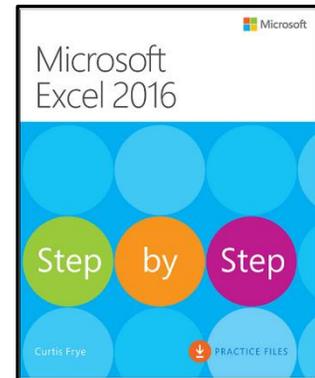
Once you login to *Lynda.com*, in the upper right of your screen you should see something similar to figure shown to the right.

Access this pull-down menu. When you click on the above menu item a listing of the playlist(s) to which you have been assigned is provided.⁴



Feel free to access any other video presentations/courses on topics not covered by the AAE375 playlists or for more detail of covered topics. If you find this additional material useful (or any other internet based information) let me know and I will add it to our class resource collection.

Required Textbook: The textbook we will use for this class is, Curtis Frye, 2015, *Microsoft Excel 2016 Step by Step* (ISBN: 9780735697485), Microsoft Press, Redmond, Washington.



This text or its e-version can be purchased directly from Microsoft or the major publishing firms. The text citations shown below in the detailed course list correspond to the e-version which I purchased from Pearson publishers.

Assignments: Your grade will be determined by (i) your reviewing the assigned videos which we can monitor (ii) completion of associated worksheets/other assignments and (iii) participation in office hours, asking questions, etc. The following Table provides a summary of the evaluation system I will use.

⁴ A playlist is simply a collection of videos centered on a common theme.

Grade Item	% of Grade
Video Reviews	25%
Exercises/Assignments	70%
Class Participation	5%
Total	100%

So that everyone proceeds at approximately at the same pace, I will release material at set intervals. All assignments will be submitted to assignment dropboxes located within the Learn@UW website, usually by 11:59 pm on the due date. I am adopting a policy of **No Late Assignments** being accepted.

The following Table shows assignment tentative due dates. These dates may be changed as we proceed through the class.

Assignments	Due Dates
1 & 2	Sept. 22 nd
3 & 4	Oct. 6 th
5 & 6	Oct. 20 th
7 & 8	Nov. 12 th

So as to provide some individual flexibility in the timing of the completion of assignments I have given pairs of assignments with the same due date. You can complete these assignments at your own pace. **Do not** wait until just before the due date as assignments may be more difficult than anticipated. Again, **late assignments will not be accepted.**

To make my life easier I would like you to use the following naming convention when submitting spreadsheet files to course DropBoxes. Suppose I have supplied you a spreadsheet file with the name: *example1.xlsx* . If you want to hand in a revised version of this file, you should use something like the following file naming convention: ***BW_Gould_example1.xlsx*** where you insert your name.

Plagiarism: I take plagiarism very seriously. That said, I encourage students to interact with one another so as to exchange ideas and make completing assignments much easier. Apart from this, my expectation is that you will hand in your own work. Copying another student's spreadsheet is not allowed and will be dealt with per UW policies and procedures. At the minimum, no credit will be given for the plagiarized material and a report will be forwarded to the Dean of CALS.

General Course Outline

I. Course Introduction

- a. *Introduction to Course:* [Course Introduction Video](#) (17 min)
[Overview of Course Website](#) (11 min)

(**Note:** These videos were produced for last Spring's offering of the course. Although the homework exercises have changed the course and website have not changed in any significant way.)

- b. *General Overview of Important Excel Features:*
[Excel Overview.pdf](#)
- c. *Creating a Spreadsheet:* [Spreadsheet Engineering_aae375.pdf](#)

Assignment #1

II. Creating and Formatting Workbooks

- a. *Getting Started with Excel:*
- i. Playlist: [AAE375 – Spreadsheet Fundamentals and Applications](#)
- Ch. 1 (42 min)
 - Spreadsheet Files – [Examples Getting Started](#)
 - Frye, Ch. 1
- b. *Entering Data:*

- i. Playlist: [AAE375 – Spreadsheet Fundamentals and Applications](#)
 - Ch. 2 (24 min)
 - Spreadsheet File: [Entering Data](#)
 - Frye, Ch. 2
- c. **Formatting and Adjusting Worksheet Layout and Data:**
 - i. Playlist: [AAE375 – Spreadsheet Fundamentals and Applications](#),
 - Ch. 4 (62 min); Ch. 5 (22 min)
 - Spreadsheet File: [Formatting](#)
 - Frye, Ch.4

Assignment #2

Assignment #1 & #2 due Sept. 22nd

III. Formulas and Functions

- a. **Creating Formulas and Functions:**
 - i. Playlist: [AAE375 – Spreadsheet Fundamentals and Applications](#)
 - Ch. 3 (41 min)
 - Spreadsheet File: [Creating Formulas and Functions](#)
 - Frye, Ch. 3.1 – 3.2, 3.4 – 3.5
- b. **Using IF, COUNTIF, SUMIF, AVERAGEIF and Other Relational Operators**
 - i. Playlist: [AAE375 – Spreadsheet Fundamentals and Applications](#),
 - Ch. 10.1, 10.4 (10 min)
 - Spreadsheet File: [Creating Formulas and Functions If Countif](#)
 - Frye, Ch. 3.3
 - ii. Playlist: [AAE375 – Advanced Formulas and Functions](#)
 - Ch 3.1 – 3.4 (22 min)
 - Spreadsheet File: [If Function](#)
- c. **Logical Functions**
 - i. [Microsoft Support Website](#)
- d. **Formula and Function Tips and Shortcuts**
 - i. Playlist: [AAE375 – Advanced Formulas and Functions](#)

- Ch 1.1 – 1.8 (34 min)
- Spreadsheet File: [TipsShortcuts](#)
- ii. Playlist: [AAE375 – Advanced Formulas and Functions](#)
 - Ch 2.1 – 2.7 (30 min)
 - Spreadsheet File: [Tools](#)

Assignment #3

IV. Re-ordering and Summarizing Data

a. Data Tables In More Detail

- i. Excel Tables Tutorial
 - [You Tube](#), (14 min) Skip Pivot Table Example starting @ 8:33 mark and ending at 10.23. (skip the advertisement):
 - Spreadsheet File: [Table Example](#)
 - Frye, Ch. 8.2
- ii. Creating an Excel Table (Contextures.com)
 - [On-Line Tutorial](#) (Text and Video)
 - Spreadsheet File: [CreateExcelTable](#)

Assignment #4

Assignments #3 & #4 due Oct. 6th

b. Sorting and Organizing Worksheet Data

- i. Playlist: [AAE375 – Spreadsheet Fundamentals and Applications](#)
 - Ch. 12.1 – 12.7 (53 min)
 - Spreadsheet File: [Data Management Features DatabaseFeatures](#)
 - Frye, Ch. 6.1-6.3

c. Combining Data from Multiple Sources

- i. Playlist: [AAE375 – Spreadsheet Fundamentals and Applications](#)
 - Ch. 9 (36 min)
 - Spreadsheet Files:

Chapter 1	Home Product Line (01)
	Employee Table (01)
	Regional Sales (01)

Chapter 2	Regional Sales (02)
Chapter 3	Regional Sales (03)
Chapter 4	Regional Sales (04)
	Employee Table (04)
Chapter 5	Regional Sales (05)
	Employee Table (05)

- Frye: Ch. 7.1 – 7.3

Assignment #5

V. Looking Up Information in a Worksheet: Use of EXCEL's Reference Functions

a. Introduction to the VLOOKUP Function

- i. Playlist: [AAE375 – Spreadsheet Fundamentals and Applications](#)
 - Ch. 10.2 – 10.3 (15 min)
 - Spreadsheet File: [VLookup](#)
 - Frye, Ch. 6.4
- ii. Playlist: [AAE375: Advanced Formulas and Functions](#)
 - Ch 4.1 – 4.5 (25 min)
 - Spreadsheet File: [VLookup II](#)
- iii. [YouTube Video](#) (10 min)
- iv. [Vlookup On-Line Tutorial](#)
 - [Tutorial PDF](#)
 - [VLookup Example](#)

b. Use of the HLOOKUP and Other Reference Functions

- i. Playlist: [AAE375: Advanced Formulas and Functions](#)
 - Ch 4.6 -4.10 (20 min)
 - Spreadsheet File: [VLookup II](#)
- ii. YouTube Video ([HLOOKUP Function](#)) (5 min)
- iii. YouTube Video ([INDEX Function](#)) (10 min)
- iv. YouTube Video ([MATCH Function](#)) (5 min)

Assignment #6

Assignments #5 and #6 due Oct. 20th

VI. Creating Charts/Graphs

a. ***Review Basic Elements of an Excel Chart***

- i. Playlist: [AAE375 – Excel 2016 Charts in Depth](#)
- Ch. 1.1–1.4 (12 min)
 - Spreadsheet File: [Ch_01_ChartConcepts.xlsx](#)
 - Frye, Ch. 9.1-9.3, 9.5

b. ***Creating Basic Charts***

- i. Playlist: [AAE375 – Excel 2016 Charts in Depth](#)
- Ch. 2.1 – 2.5 (20 min)
 - Spreadsheet File: [Ch_02_ChartBuilding.xlsx](#)
 - Frye, Ch. 9.1 - 9.5

c. ***Style Your Charts Using the Design Tab***

- i. Playlist: [AAE375 – Excel 2016 Charts in Depth](#)
- Ch. 3.1 – 3.10 (42 min)
 - Spreadsheet File: [Ch_03_DesignTab.xlsx](#)

d. ***Fine Tuning Your Chart Elements***

- i. Playlist: [AAE375 – Excel 2016 Charts in Depth](#)
- Ch. 4.1 – 4.10 (47 min)
 - Spreadsheet File: [Ch_04_ChartConcepts.xlsx](#)
 - Frye, Ch. 9.6

Assignment #7

VII. Creation of Pivot Tables and Pivot Charts for Dynamic Analyses

a. ***Creating and Using Pivot Tables***

- i. Playlist: [AAE375 – Spreadsheet Fundamentals and Applications](#)
- Ch. 14.1-14.5 (46 min)
 - Spreadsheet File: [14 – PivotTables.xlsx](#)
 - Frye, Ch. 10.1–10.5
- ii. Playlist: [AAE375 – Excel 2016: Pivot Tables in-Depth](#)
- Ch 1.1 – Ch 1.9 (36 min)
 - Spreadsheet Files:

Section	File Name
1.1	Introducing.xlsx
1.2	DataPrep.xlsx

1.3	CreatePivot.xlsx
1.4	Recommended.xlsx
1.5	Pivoting.xlsx
1.6	Configure.xlsx
1.7	External.xlsx
1.8	Consolidating.xlsx
1.9	Managing.xlsx

b. *Creating and Using Pivot Charts*

i. Playlist: [AAE375 – Excel 2016: Pivot Tables in-Depth](#)

- Ch 6.1 - 6.7 (24 min)
- Spreadsheet File:

Section	File Name
6.1	CreatePTChart.xlsx
6.2	Pivoting.xlsx
6.3	Filtering.xlsx
6.4	Formatting.xlsx
6.5	ChangeLayout.xlsx
6.6	ChangeType.xlsx
6.7	Trendline.xlsx

- Frye, Ch. 10.6

Assignment #8

Assignments #7 and #8 due Nov. 10th