

Lesson Plan

Lesson: GPA Calculator Using Excel

Timeframe: Before Class/In Class-Ind/After Class-Team – Week 7

Materials needed:

- Laptop PC or Mac
- Excel most recent version via CPP Office365
- Download instructions and files from Bb
- Set up CPP account with Lynda.com
- Set up CPP OneDrive account via Office365

Objectives:

Basic: (to be practiced prior to class)

1. *Being able to use basic skills in Excel (i.e. Open and save files, copy and paste, adding a formula (add, multiply, divide), Sum*
2. *Being able to calculate GPA (Grade Point Average), for a list of 5 classes where grades and units for each class are provided.*
3. *Set up CPP accounts for Lynda.com and OneDrive*

Advanced: (to be mastered during and after class)

1. *Applying and Using “Name a Range” in Excel*
2. *Applying and Using Data Functions like “Sort” in Excel*
3. *Applying and Using formulas and VLookup Tables in Excel*
4. *Copying formulas, copying spreadsheets.*
5. *Create your own GPA Calculator*
6. *Can describe difference between “fixed reference” and “dynamic reference”*
7. *In your teams create a new excel tool lesson plan.*

Background: Using Excel as an engineering tool

Microsoft Excel, the industry standard spreadsheet has become part of the everyday work of researchers in all areas of engineering and science. Excel has a range of scientific functions that can be used for the modeling, analysis and presentation of qualitative data. Using Excel as a student and as an engineer is crucial to your success. The first version of Excel was released for the Mac in 1985 and the first Windows version was released in 1987.

Introduction to Lesson:

You will start by creating a simple spreadsheet to Calculate Grade Point Average (GPA).

See sample below:

Grade Points = Points X Units

GPA = [Sum of Grade Points]/[Sum of Units]

Course	Grade	Points	Units	Grade Points
PE 131	A	4.0	1.0	4.0
CHE 202	A	4.0	2.0	8.0
CHE 303	W	4.0	0.0	0.0
CHE 311	B	3.0	4.0	12.0
ESG 121	A	4.0	2.0	8.0
PHY 133	C	2.0	4.0	8.0
Sum			13.0	40.0
GPA				3.08

I started college in the Fall of 1973, and graduated with a BS degree in Chemical Engineering in Spring of 1979. I started my studies at California State University Sacramento (CSUS) and also attended Columbia Junior College during the summer, both of these colleges were on the Semester system. I will provide a spreadsheet with all the courses I took at CPP, the units and the grades I received.

For the “in-class” exercise you will be calculating my overall GPA, Cal Poly GPA, and Core GPA, utilizing the following tools in Excel.

- ✓ Name a range
- ✓ VLOOKUP
- ✓ Sort
- ✓ Sum of Columns
- ✓ Copying Formulas
- ✓ Setting up spreadsheet to Calculate my Overall, CPP, and Core GPA
- ✓ Create your own GPA calculator for Overall, CPP, and Core GPA

If you are new to Excel this will not be an easy assignment, be sure to complete the basic objectives before class, be sure to utilize your classmates, and have your computer prepared to run the most recent version of Excel. I expect you to use Microsoft Office Excel for this assignment, which is included as a free download to all students, for both Mac and PC.

Procedure [Time needed, include additional steps if needed]:

Pre-Class Individual Space Activities and Resources:

Steps	Purpose	Estimated Time	Learning Objective
<p>Step 1:</p> <p>Set up your account For Lynda.com, OneDrive, and Microsoft Office, via your CPP username and password.</p>	<p>Utilize resources provided by CPP. Free for all students.</p>	<p>30 minutes</p>	<p>Gain academic skills through the use of campus resources</p>
<p>Step 2:</p> <p>Watch Lynda.com video on Excel Basics</p>	<p>Familiarize yourself with Lynda.com and how to find instructional videos.</p>	<p>30 minutes</p>	<p>Identify and develop skills to be lifelong learners.</p>
<p>Step 3:</p> <p>Set up a spreadsheet in excel similar to the one on page 2. Add courses you are taking this quarter. Put in your current grades. Use the following functions in Excel: Formula, Sum Use the points table; to apply to your expected grades.</p>	<p>Become familiar with Excel, with a simple hands on exercise.</p>	<p>30 minutes</p>	<p>Demonstrate basic excel skills by creating a GPA spreadsheet in Excel</p>
<p>Step 4:</p> <p>Complete a Pre-Quiz for Excel basic skills.</p>	<p>Check for understanding on excel concepts learned from Lynda.com videos</p>	<p>5 minutes</p>	<p>Retention of basic excel skills.</p>

<p>Step 5: Reflection: Reflect on your pre-class excel assignment. Discuss your prior knowledge. What new did you learn? What questions do you have about excel? How long did it take you to complete the GPA calculator? Did you use a calculator? If not did you use the excel features: “Sum”, “Formula” Submit your reflection as a journal entry in Blackboard.</p>	<p>Reflection is a motivational and retention tool.</p>	<p>10 min</p>	<p>Summarize what was learned, and recognize what you still don't know about excel.</p>
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In-Class Group Space Activities and Resources:

Steps	Purpose	Estimated Time	Learning Objective
<p>Step 1: Using my personal transcript, courses, grades, and units for classes taken at CSUS, Columbia Jr College, and Cal Poly Pomona as a Chemical Engineering student calculate my overall GPA, CPP GPA, and Core GPA. Use VLOOKUP Table. Instructions provided, and demonstrated in class.</p>	<p>To complete the process by breaking down each step to complete the final goal: Overall GPA, CPP GPA, and Core GPA</p>	<p>40 min</p>	<p>Applying and Using several tools incl. VLOOKUP function in Excel.</p>
<p>Step 2: Using same set up, the student will create his own GPA calculator.</p>	<p>Construct a functional GPA Calculator for yourself to continually track your progress.</p>	<p>10 min</p>	<p>Creation of your own GPA calculator.</p>

<p>Step 3: In your teams select an Excel concept to teach others in the class. Select Lynda.com videos and prepare a PowerPoint to teach the concept to the class. Select an engineering example.</p>	<p>Work in team to learn a new excel skill. Prepare 5 minute PowerPoint presentation to share in class.</p>	<p>30 minutes</p>	<p>Create an excel concept lesson plan.</p>
<p>Step 4: Teach the excel concept to your classmates.</p>	<p>Complete an in-class presentation</p>	<p>5 min</p>	<p>Teach concept to class</p>
<p>Step 5: Reflection: Naming the range for the VLOOKUP Table is an example of “Fixed Reference”. Explain how “Fixed Reference” and “Dynamic Reference” is used in Excel. Which function key is used to switch from “Dynamic Reference” (the default) to “Fixed Reference”? Submit your reflection as a journal entry in Blackboard.</p>	<p>It is important to understand this excel concept</p>	<p>10 minutes</p>	<p>Reflection is a motivational and good retention tool.</p>

Closure/Evaluation:

Analysis:
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Post-Class Individual Space Activities:
Submit your excel file created in class and completed after class to Blackboard.

Connections to Future Lesson Plan(s):
Do something similar for MS Word and MS PowerPoint.