

**Syllabus: Organizing your Class, Your Time, and Your Life Utilizing Excel****Lesson 1: Getting Started with Microsoft Excel**

**Summary:** In this lesson, the participant will be given an inspiring tour of all the major features of Excel so that they, as an educator, can see the wide variety of classroom opportunities that become available to students in a classroom when they have a command of the features of Microsoft Excel. In introductory video, participants will be shown how to teach Microsoft Excel with just “chalk and a chalkboard” just in case the teacher does not have computers in their classroom (but only has access to a computer lab once a week). Then they will be shown how to use Excel for keeping a roster, keeping grades, compiling data, analyzing financial information, and charting data.

**Lesson objective:** Understand how to open Excel and create and print a new Excel Workbook. (The concept of a Workbook will be defined.)

**Learning Outcomes:**

- Creating a new workbook
- Opening an existing workbook
- Using ribbons
- Using status bar
- Printing a worksheet
- Saving and closing a workbook

**Student Activity (Note: The word “student” refers to the teaching professional taking the class)**

- Watch the instruction video. All videos are created by the instructor and provide a “personal touch” to the learning experience. Each course begins with the student seeing the instructor talk about the lessons and each lesson shows the instructor performing tasks. Participants in past Quikitech classes have commented on how this format gives them the feeling that they are receiving personable instruction. (.5 hour)
- Read the lesson (5 hours)
  - Introduction to the history of spreadsheets (.5 hours)
  - Introduction to how to open a worksheet (.5 hours)
  - Watch 3 other tutorial videos that describe features of Excel and Excel tutorial at <http://www.excel-easy.com/> (Read only the Intro, basics, Functions, and Data Analysis Section) (4 hour – Note: The 4 hours is also because some students need help obtaining a legal copy of Excel for download and can come to the Quikitech lab if they need help getting started).
- Homework assignment (Project): Create an Excel document that lists the first names of all the students in your class and Upload it to the system. Do not put in last names since Quikitech is not interested in holding on to information of minors under the age of 18

without the permission of parents. (3 hour)

- Take a quiz that tests knowledge of the concepts presented in this lesson. (.5 hour)

**Teacher Activity**

- Read and grade the homework and ensure the student was able to open and save an Excel document.
- Grade the quiz and email the student their grade.
- Note: For every lesson, the instructor will record a video of him teaching the lesson and of him using the tool.

**Teacher Feedback**

- If the Quiz is below 51% or the uploaded document is not an Excel document, the instructor will interact with the students through email or skype until the student is familiar with using Excel.

**Method of Teacher Feedback**

This lesson will provide three channels of feedback.

- Email: Participants will be emailed individually on the grade of their homework. Donny will provide adjustments and feedback on incorrect items or obvious demonstration of not grasping the concept.
- Online Quikitech e-learning tool: Quizzes are setup in the Quikitech e-learning system (which is similar to Moodle). The tool gives privacy to the students quiz answers. Students who get below 51% are asked by the instructor to retake the test. (This particular bullet point is not repeated for the subsequent lessons, but it applies to all lessons below that have quizzes).
- Skype Office hours: If you are out of town, you can schedule a skype session with the instructor.

**Total hours:** 9 hours (The breakdown of the hours is listed in the Student Activity Section)

**Lesson 2: Managing Columns Rows and Cells**

**Summary:** In this lesson, participants will see a demonstration of how to use the most critical constructs of Microsoft Excel which include Columns, Rows and Cells. These are the A, B, C's of Excel. The key item of learning in this lesson is the skill of being able to both enter data into cells and also manage, move, delete and adjust the columns and rows.

**Lesson objective:** The objective of this lesson is to teach the educator the basics of cells in Microsoft (MS) Excel application and how to modify columns, rows, and cells. This lesson will also teach the educator how to teach their students these basics.

**Learning Objectives:**

- Cell basics

- Selecting cells
- Moving cells
- Adding columns/rows
- Moving columns/rows
- Hiding columns/rows
- Modifying column width/row height
- Deleting columns/rows

**Student Activity (Note: Student refers to the professional taking the class)**

- Watch the instruction video (1.5 hour – Note: This amount of time is once again given in light of new users of Excel who will need to watch the video several times to get used to some of the features).
- Read the lesson and follow the step-by-step instructions (2.0 hours).
- Homework assignment: Create a sample Excel financial spreadsheet with the column – “Grocery Item”, “Price”, and “Discount %”. Fill in the cells with at least 25 rows of data. You can make up the date. Then hide the “Discount” row. Upload your final document to the Quikitech E-Learning module. (3.5)
- Post to the Forum at least 4 ways you can use Excel in your classroom. (1.5 hours)
- Take a quiz that tests knowledge of the steps for sending, reading, and managing email (.5 hour)

**Teacher Activity and Interaction**

- Review answers to the homework assignment that will indicate whether the student followed the step-by-step instructions correctly. Guide the student to a clearer understanding if they are having trouble – using skype and email.
- Grade the quiz and email the student their grade.

**Teacher Feedback**

- Donny will provide specific instructions to correct the misunderstanding, by sending an email to the student.

**Method of Teacher Feedback**

This lesson will provide four channels of feedback.

- Email: The instructor will give feedback on the homework.
- Discussion Forum: Students’ reflections will be posted and students need to respond to someone’s reflection. The teacher will also respond on the blog.
- Skype: If a student is out of town, we will to a skype tutorial section.

**Total hours:** 9 (The breakdown of the hours is listed in the Student Activity Section)

**Summary:** This lesson discusses one of the most powerful features in Excel: Formulas. By being able to use formulas in Excel, Excel becomes a handy calculator, a data organizer, and a data presenter all in one. After being able to learn how to use Excel formulas, teachers can easily calculate student grades or train their students to calculate financial numbers.

**Lesson objective:** The objective of this lesson is to learn about the basic formulas in MS Excel such as SUM function, and Average function, and how to create a formula in Excel. Educators will also learn how to teach their students on these functions.

**Student learning outcomes. Learn about:**

- About cell references
- About mathematical operators
- Creating a formula in MS Excel
- The SUM function
- The Average function

**Student Activity (Note: Student refers to the professional taking the class)**

- Watch the instruction video on how to use the SUM and Average formula. (2 hour Note: The video may need to be watched several times to get a solid understanding of how to use these formulas. Formula manipulation is one of the most important and basic concepts in Excel).
- Read the lesson and supplementary materials and practice the steps of what you watched in the video. (2 hours)
- Homework assignment: Create an Excel document with all the California population data that is listed in this chart: <http://spreadsheets.latimes.com/california-cities-population-change/> . The instructor will show you how to cut and paste this into excel in the beginning video Sum up all the data in 2011 and 2012. Also average the 2011 and 2012 columns and find what the average population per city was in both years. (4 hours).
- Take a quiz that tests knowledge of this lesson (1 hour)

**Teacher Activity**

- Read and grade the homework and quiz.

**Teacher Feedback**

- If the student's work lacks understanding of the concept in this lesson, then the instructor will guide them in how to properly compose use formulas for their data.

**Method of Teacher Feedback**

This lesson will provide four channels of feedback.

- Email: Participants will be emailed individually on the grade of their homework. The QuikiTech instructor will provide adjustments and feedback on incorrect items or obvious demonstration of not grasping the concept. Donny will respond to the email of the student who must send an email to complete their homework.
- Students at this point, will be given opportunity to visit the QuikiTech lab for a one on one tutoring session. Those who have a firm grasp on the concepts do not need to come to the QuikiTech computer lab. The QuikiTech computer lab has 5 computers and teachers can schedule a time any day of the week except Sunday.

**Total hours:** 9 hours (The breakdown of the hours is listed in the Student Activity Section)

#### Lesson 4: Advanced Formulas in Excel

**Summary:** In this lesson, educators learn to use more complex formulas. The chart below shows how the Common Core Standards for Mathematics relate to each grade

K	1	2	3	4	5	6	7	8	HS
Counting & Cardinality									
Number & Operations Base Ten						Ratios & Proportional Relationships			Number & Quantities
			Number & Operations Fractions			The Number System			
Operations & Algebraic Thinking						Expressions & Equations			Algebra
							Functions		Functions
Geometry									Geometry
Measurement & Data						Statistics & Probability			Statistics & Probability

Findell & Foughty (2011) *College and Career Readiness through the Common Core State Standards for Mathematics*

Educators in each grade can use Excel to help students in each of the math topics above by using Excel's more advanced features. In this lesson, educators will learn how to format the formulas in Excel in the proper way in order to calculate more complex problems. The most critical part of this lesson is learning the order of operations for a formula. In the chart above, each square or rectangle represents a domain of mathematical knowledge and the letters and numbers at the top indicate the grade for that concept. Several concepts span several grades.

**Lesson objective:** The objective of this lesson is to learn about using complex formulas in MS

Excel such as adding up information from different rows and columns with multiplication, percentages. After learning how to use complex formulas you will learn how to teach them to your students.

**Learning Outcomes:**

- Learn about the order of operations
- Learn how the order of operations work in Excel
- Learn about using parenthesis
- Learn about complex formulas

**Student Activity (Note: Student refers to the professional taking the class)**

- Watch the instruction video on how to use more complex formulas (1 hour).
  - Read the lesson on advanced formulas (2 hours)  
Homework: This homework will guide the student through a “money” reporting example. The details of this example are in the actual lesson. The following questions will be asked after walking the participant through the example through both videos, reading and forum interaction.
    - Calculate the discount amount for each item?
    - Find the price of each item after discount?
    - Calculate the total amount after discount without calculating the discount amount (Hint: Find the 80% of the original total)
    - What is the amount he saved by using the Citi bank credit card?
    - Upload your answer in the Quiz that follows.
    - In preparation for the next 2 lessons, where you must implement something in your classes or professional life, begin to consider what topics, subject, or real-life example you will use for Lesson 5 which will be on “Charts” and Lesson 6 which will be on a Finance Example. Upload your ideas in the Forum.
- (5 hours)
- Take a quiz that tests knowledge of advanced formulas (1 hour)

**Teacher Activity**

- Read and grade the participants Excel document

**Teacher Feedback**

- If the student’s work lacks understanding they will see a lot of red marks in their document and will be asked to correct their work.

**Method of Teacher Feedback**

This lesson will provide two channels of feedback.

- Email: Participants will be emailed individually feedback of their homework. The instructor will provide adjustments and feedback on incorrect items or obvious demonstration of not grasping the concept.

- The quiz will also be graded and participants will receive their grade through the Quikitech online e-learning platform on which they have an account.
- Reply to the Forum responses.

**Total hours:** 9 hours (The breakdown of the hours is listed in the Student Activity Section)

### **Lesson 5: Excel Charts**

**Summary:** In this lesson, you will see how to use charts to display series of numeric data in a graphical format. Representing data in graphical format make it easier for you to understand large volume of data and the relationship between different series of data. If your worksheet contains numeric data, you can plot that data into a chart by selecting the required chart type from the list of various chart types available in Excel. This lessons is also appropriate for differentiated instruction to English language learners as well as gifted students.

**Lesson objective:** To train participants on how to create and format charts using Microsoft Excel.

**Student learning outcomes:**

In this lesson you will learn the following – and learn how to teach your students the following:

- About Charts in MS Excel
- Types of Charts in MS Excel
- Creating a Basic Chart
- Modifying a Chart

**Student Activity (Note: Student refers to the professional taking the class)**

- Watch the instruction video on how give a graphical (chart) presentation of data (1 hour).
- Read the lesson and supplementary materials that gives step by step how to create charts (2 hours)
- Homework assignment with Implementation in the Classroom: Take one of the topics that you considered in Lesson 4, that would relate to your professional life and to your students (or colleagues) and create a lesson plan to teach them the basics of how open Excel, add data to columns, and create a chart. The Lesson plan should have an “Objective”, “Student outcome Section”, “Steps to follow”, and how you will evaluate that your students obtained the concept. Give the lesson to your students. Write a reflection in the forum of where the students had trouble and what could have been taught to them more thoroughly to make the exercise easier on them. Describe whether your topic was appropriate and if not, how you would change it. (6 hours)

- Take a quiz that tests your own knowledge of creating chart (1 hour)

**Teacher Activity & Interaction**

- Read and grade the Lesson Plan.
- Grade the quiz and email the student their grade.

**Your Implementation in the Classroom**

- Giving a lesson to your class:  
Using your lesson plan, during computer lab time or sometime before you proceed to Lesson 6 teach your students the details of your lesson plan.
- Writing a reflection  
Give a reflection in the Quikitech online e-learning of your experience in using the lesson plan to teach your students about how to open Excel, add data, and create a graph.

**Teacher Feedback**

- Grade the Quiz
- Respond to their reflection.

**Method of Teacher Feedback**

This lesson will provide two channels of feedback.

- Email: Participants will be emailed individually on the grade of their homework. The instructor will provide adjustments and feedback on incorrect items or obvious demonstration of not grasping the concept.
- Personal Forum: The student will share reflections with the instructor and the instructor will add comments directly on the shared online document.

**Total hours:** 10 hours (The breakdown of the hours is listed in the Student Activity Section)

**Lesson 6: Practical Example**

**Summary:** In this lesson, all that you have learned in the previous lessons will come together in the context of a practical example. Ultimately, utilizing the features of Excel is for the sake of addressing real-world scenarios, issues, problems, numerical analysis, and real-life projects. Lesson 6 (this lesson) gives an example real world problem and Lesson 7 (the next lesson) allows you to create a project, based on what you learn in this lesson, to give your students opportunity to work with Excel in the context of an actual situation.

**Lesson objective:** The objective of this lesson is to describe some of the real-life examples to teach your students various functions and formulas used in MS Excel, and how to apply these features in real-life scenarios.



**Student learning outcomes: (Note: Student refers to the professional taking the class)**

- Learn how to use Excel in the context of a real world example.

**Student Activity (Note: Student refers to the professional taking the class)**

- Watch the instruction video that shows a step by step view of how to use Excel in one of the most common scenarios - Finances. (1 hour)
- Read the lesson and supplementary materials. (3 hours)
- Homework assignment with implementation in the classroom
  - Create a Lesson plan that helps your students sell a product at a store and keep a list of purchases in an Excel spreadsheet. Have the students use formulas. Be creative and feel free to utilize the columns and rows in a way that makes sense.
  - In your lesson plan, have a section for English Language Learners and Standard English Language Learners that has a glossary of definitions for financial terms to teach them terms like “Product”, “Budget”, “Sum Total”. For culturally diverse students, you may want to make the “Products” a kind of food that is familiar to their cultures.
  - Add a section in your lesson plan that applies the lesson plan for gifted students and guide them to graphing one month’s worth of purchases.
  - Give the Finance related (or Money related) exercise to your students and write a reflection in the forum. Upload your lesson plan. You do not need to upload a sample of your students work. That exercise will be left to the next lesson.
  - Write a reflection on how well your students could use formulas and what you feel went well in your lesson and what you feel did not go well.  
(11 hours)
- Take a quiz that tests knowledge of creating Spreadsheets (1 hour)

**Teacher Activity**

- Read and grade the quiz.
- Grade the quiz and email the student their grade.

**Teacher Feedback**

- Give feedback on lesson plan through to Forum.

**Method of Teacher Feedback**

This lesson will provide four channels of feedback.

- Email: Participants will be emailed individually on the grade of their homework. Donny will provide adjustments and feedback on incorrect items or obvious demonstration of not grasping the concept.
- The instructor will give feedback in the Forum.

**Total hours: 16 hours (The breakdown of the hours is listed in the Student Activity Section)**

**Lesson 7: Project Based Learning with Excel**

**Summary:** In this lesson, you will learn how to guide your students to doing research in which they should gather information from the internet and present the information in a graphical format within the context of a subject that you already teach at school.

**Lesson objective:** The objective of this lesson is to teach your students on how to gather data from the Internet, and present the data in an Excel worksheet.

**Student learning outcomes: (Note: Student refers to the professional taking the class)**

- Learn how to help student gather data from the internet.
- Learn how to help them present the data and make a conclusion about the data using Excel charts.

**Student Activity (Note: Student refers to the professional taking the class)**

- Watch the instruction video (1 hour)
- Read the lesson and step-by-step instructions (1 hour).
- Homework assignment with classroom implementation: Guide your students into creating an excel document with data from the internet. Help them present that data in a graphical form and explain what the data means and Guide your students into gathering information from the internet (you can use the Census Bureau site used in the reading portion) and help the graph the data and explain how it could be used.
  - Upload a sample student's work.
  - Write a reflection on the challenges and the benefits of having students do research and analyze data with how it might be used to inform decisions that decision-makers must make. (10.5 hours)
- Take a quiz that tests. (.5 hour)
- Fill out a survey to conclude the course.

**Teacher Activity**

- Grade the quiz and email the student their grade.
- Review Forum feedback.

**Teacher Feedback**

- If the homework answers indicate that the student did not follow some steps correctly, the instructor will explain what is wrong and what steps to follow to arrive at the correct solution.
- Reply to their reflection



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**Method of Teacher Feedback**

This lesson will provide four channels of feedback.

- Email: Participants will be emailed individually on the grade of their homework. Donny will provide adjustments and feedback on incorrect items or obvious demonstration of not grasping the concept.
- The instructor will give feedback in the Forum.

**Total hours:** 13 hours (The breakdown of the hours is listed in the Student Activity Section)