USC Iovine and Young Academy

ACAD 179- Excel for Business Management (T, Th-11-12:20pm)

Spring 2015 Location: SKS 404

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IT Help: Academic Information Services - HOH 300. Hours of Service: 8 AM – 6PM Contact Info: 213-740-3000

Course Description

This course is designed to provide you with a "Spreadsheet-Digital Toolbox," to analyze information, build Excel based model for business management and build creative models to visualize data. This course will give you the tools and methods to increase your productivity and give you a unique competitive advantage in an increasingly data-centric global business environment.

More specifically, we will cover the following topics:

- Excel as a Digital Tool: Increase Productivity using Excel
- Excel as a Visualization Tool: Representing Data Visually and Building Dash Boards
- Excel for Business Optimization: Using Solver and Goal Seek for Optimal Allocation of Resources
- Excel as a Programming Tool: Building Macros in Excel
- Excel as an Analytics Tool: Using Built in Excel Statistical tools

Learning Objectives

The goal of this course is to learn how to convert raw data into actionable data to increase productivity, analyze data to obtain business insights, present data visually as a dashboard for quicker decision making, build business models in Excel for optimal allocation of resources, create macros for efficient usage of Excel.

The course focus is increase the spread sheet skillset of students and to enable them to make effective business decisions using Excel. Students will demonstrate technical proficiency in the

use of EXCEL to handle data sets, analyze them efficiently and help solve business problems and make effective decisions.

Students will demonstrate the ability to critically analyze data, evaluate information gathered for decision making in the local, regional and global business environment and present data in a meaningful form.

Prerequisite(s): None Co-Requisite (s): None Concurrent Enrollment: None Recommended Preparation: None

Instructional Methods

The class will consist of lectures, quizzes, case-based class discussion, and computer lab work. Each case will start with a brief in-class lecture followed by one or two classes of computer lab work.

Lectures: The course pack for the class will be available for purchase at bookstore; it covers the cases for all the topics discussed in this course. The lecture notes in PowerPoint will summarize all of the theory and concepts needed for this class. The lecture notes will be posted on Blackboard.

Case Assignments: During the course we will analyze 5 case assignments, one for each of the 5 modules. These 5 case assignments are:

Case #1: Piedmont Trailer Manufacturing Company Case #2: Milligan's Storage Case #3: Resource Allocation at Applichem Case #4: Dynamic Charting using Macros Case#5: Smartparty ware – Search Engine Marketing

The case description will be posted on Blackboard. These cases are extremely important in learning the materials in class. Each of the 5 cases will address different skills and techniques in analyzing data. We will have in-class discussion of each case and work through parts of the case assignment during the computer lab session. Thus, it is important that you read the case materials before the lab session. You can earn participation credits by submitting a half-page discussion of the case via Blackboard by the end of class on the day of the lab. The half-page discussion should address the case questions listed in the course outline. The final case assignment is usually due one Session after the lab session.

Below is the guideline for completing your case assignments:

- Answer the questions that you are asked clearly and concisely.
- Some questions will ask for specific numbers and calculations. <u>To receive full credits, you</u> <u>must show your work and calculation!</u> You can write out your calculation in pens/pencils and stapled it to your final case submission.
- For questions that ask for charts and graphics, you must print out the graphics from Excel and include them in your report. Please make sure to format your chart and graphics properly. Your scores on each assignment will depend on the quality of your submission.

- There will be some questions that ask you to assess and interpret the results of the model. In this case, you will need to provide appropriate outputs from the analysis. When presenting the output of the analysis, please be careful to format them so that it is easy to read and follow your logical arguments. Once again, your grade will depend on the quality of your submission.
- Finally, there may be questions that ask for you to identify the business insights that you obtain. <u>Please state your answers briefly and concisely!</u> Long-winded answers tend to receive lower scores.

Case assignments are due in-class on the indicated due date and should be posted to blackboard. Late submissions are not accepted.

Computer in Classroom

Computer is an integral part of this course. We will have lab sessions every class. During the lab session, we will discuss the case in details, work through part of the required analysis, and provide guidance on how to complete the remaining questions in the case assignment. Thus, it is very important that you attend class/lab sessions.

Technological Proficiency and Hardware/Software Required

We will use the Computers with Excel installed (windows version of Excel is preferred). You are expected to use Excel and may be one more software like Tableau for visual representation of the data.

Required Readings and Supplementary Materials

The course pack for the class will be available for purchase at USC bookstore and the class power point slides, Excel files and data will be posted in blackboard.

Grading Breakdown

The course grade is based on a final exam, in-class quizzes (there will be three quizzes). If you complete all quizzes, only the best two will count toward the course grade. If you complete less than three quizzes, only the best ONE will count), case assignments, case presentation, and class participation, according to the following weights:

Assignment	Points	% of Grade
Class Participation	50	5%
Quizzes	200	20%
Case Assignments	400	40%
Final Exam	350	35%
TOTAL	1000	100%

All exams/quizzes are closed books. You are allowed to use one double-sided crib sheet (8.5x11) on each quiz/exam. <u>No make-up exams or quizzes are offered</u> – accordingly, all quizzes must be taken on their assigned date and in the section in which students are registered.

Quizzes: We will have short in-class quizzes to check your understanding of the materials. The questions on the quizzes will be a straightforward application of the data analysis technique that you have learned. The data for the quiz will be provided in-class via blackboard.

Final Exam: There will be a comprehensive final exam on the understanding of the materials. In the final exam you will use EXCEL software. The data for the quiz will be provided in-class via blackboard and you will answers the questions on the final exam and submit the completed Excel file on blackboard.

Additional Policies:

ACAD GUIDELINES

Add/Drop Process

ACAD 179 will be closed enrollment (D-clearance) for the first three Sessions of the term. If there is an open seat, students will be freely able to add a class using Web Registration throughout the first three Sessions of the term. If the class is full, students will need to continue checking Web Registration to see if a seat becomes available. There are no wait lists for these courses, and professors cannot add students. An instructor may drop any student who, without prior consent, does not attend the first two class sessions; the instructor is not required to notify the student that s/he is being dropped. If you are absent six or more times prior to drop date (the last day to withdraw from a course with a grade of "W"), your instructor may ask you to withdraw from the class by that date. These policies maintain professionalism and ensure a system that is fair to all students.

Notice on Academic Integrity

USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. SCampus, the Student Guidebook, (www.usc.edu/scampus or http://scampus.usc.edu) contains the University Student Conduct Code (see University Governance, Section 11.00), while the recommended sanctions are located in Appendix A.

Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at: <u>http://www.usc.edu/student-affairs/SJACS/.</u> Failure to adhere to the academic conduct standards set forth by these guidelines and our programs will not be tolerated by the USC ACAD community and can lead to dismissal.

Class Notes Policy

Notes or recordings made by students based on a university class or lecture may only be made for purposes of individual or group study, or for other non-commercial purposes that reasonably arise from the student's membership in the class or attendance at the university. This restriction also applies to any information distributed, disseminated or in any way displayed for use in relationship to the class, whether obtained in class, via email or otherwise on the Internet, or via any other medium. Actions in violation of this policy constitute a violation of the Student Conduct Code, and may subject an individual or entity to university discipline and/or legal proceedings.

No recording and copyright notice

No student may record any lecture, class discussion or meeting with me without my prior express written permission. The word "record" or the act of recording includes, but is not limited to, any and all means by which sound or visual images can be stored, duplicated or retransmitted whether by an electro-mechanical, analog, digital, wire, electronic or other device or any other means of signal encoding. I reserve all rights, including copyright, to my lectures, course syllabi and related materials, including summaries, PowerPoints, prior exams, answer keys, and all supplementary course materials available to the students enrolled in my class whether posted on Blackboard or otherwise. They may not be reproduced, distributed, copied, or disseminated in any media or in any form, including but not limited to all course note-sharing websites. Exceptions are made for students who have made prior arrangements with DSP and me.

For Students with Disabilities

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to your TA) as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m.–5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776. For more information visit www.usc.edu/disability .

Emergency Preparedness/Course Continuity

In case of a declared emergency if travel to campus is not feasible, USC executive leadership will announce an electronic way for instructors to teach students in their residence halls or homes using a combination of Blackboard, teleconferencing, and other technologies.

Please activate your course in Blackboard with access to the course syllabus. Whether or not you use Blackboard regularly, these preparations will be crucial in an emergency. USC's Blackboard learning management system and support information is available at <u>blackboard.usc.edu</u>.

Course Disclaimer

This syllabus is an invitation to students to engage in an exciting and interactive study of Excel for Business Management. The intention of the ACAD 179 instructor is to provide you with skillset to analyze information build Excel based model for business management and build creative models to visualize data. The learning environment will be collaborative and supportive; we will learn from one another both in and out of the classroom. To that end, modifications to this syllabus might be warranted as determined by the instructor as he assess the learning needs of this particular class of students.

Course Schedule: Session Breakdown

Module 1: Excel as a Digital Tool - Simple Financial Analysis on Piedmont Trailer Manufacturing Company

Session 1 – Introduction to the Excel

Questions: What is a Spread Sheet? How to use a Spread Sheet?

Learning Outcomes: The purpose of this lesson is to introduce the structure of the Excel. Topics include navigation, highlighting, selection, entering data and editing cells, basic formulas, simple functions, coping, using absolute addresses, formatting and printing.

Session 2 - More on Excel and Introduction to Case 1: Customer Order Tracking System Feasibility Analysis

Questions: How do we convert raw data into a usable format in Excel? How can we use basic functions in Excel to analyze data? How to convert date and time into usable format in Excel?

Learning Outcomes: You will develop familiarity with Excel as a tool for data analysis, evaluation of performance metrics, and basic excel functionalities.

- Understand how to import raw data into Excel
- Learn how to format data in Excel
- How to use CONCATENATE, IF, and date functions in Excel

Session 3 - Case1: Customer Order Tracking System Feasibility Analysis

Questions: How to analyze data and evaluate key financial performance metrics in Excel using simple functions and financial functions in Excel? How to present the cash flow in a chart?

Learning Outcomes: You will develop familiarity with Excel as a tool for simple financial data analysis like Present Value and Net Present Value, evaluation of performance metrics, and creation of Chart. We will work through the datasets for Case #1

- Organizing Data in different Sheets in Excel and linking the cells.
- Understand how to use simple mathematical functions and corresponding financial functions in Excel
- Create charts

Due: You can earn participation credits by submitting a half-page discussion of Case #1 by 6am on the day of this class via Blackboard.

Case Preparation Questions:

- 1. What is the Fixed Cost for Customer Order Tracking
- 2. How much is the variable Cost for Customer Order Tracking?
- 3. What is the current interest rate?
- 4. What are the important KPIs to consider to analyzing the financial feasibility?

Module 2: Excel as a Visualization Tool - Simple Inventory Analysis on Milligan's Storage

Inventory Tracking System

Session 4 – Working with pre-existing worksheets, Array Commands in Excel

Questions: What is an Array in Excel? How does it increase productivity?

Learning Outcomes: Array Commands in Excel increases productivity, learn how to work with multiple cells at the same time.

- Learn Excels functions, like, Average, Count, Maximum, Minimum, Rank, Match and Offset functions.
- To simple Business Inventory Management.

Due: Case #1 on Customer Order Tracking System Feasibility Analysis

Session 5 – Case2: Milligan Storage Inventory Tracking System

Questions: What is an Inventory System? Which are the top five items in inventory?

Learning Outcomes: You will use excel to find the top five items in the inventory and their associated details rather than sorting the data.

- Understand Array Commands
- Learn how to sort data efficiently and fetch the required information.
- Create Simple Dash Board to give a visual view of the inventory in the company.

Due: You can earn participation credits by submitting a half-page discussion of Case #2 by 6am on the day of this class via Blackboard.

Case Preparation Questions:

- 1. What is the reason for building inventory management System
- 2. How many items are there in the inventory
- 3. Which is the most costly item in the inventory?

Session 6 – Case2: Milligan Storage Inventory Tracking System - Continued

Quiz # 1: Data Analysis in Excel

Module 3: Excel for Business Optimization: Using Solver and Goal Seek for Optimal Allocation of Resources

Session 7 – Advanced Excel Tools

Questions: How to optimize in Excel using Goal Seek? How to optimize in Excel using Solver? **Learning Outcomes:** We will learn how to various special tools available in Excel for business Optimization.

- Understand the Break-even Analysis and how to use goal seek to find the optimal point.
- Recognize the important of the constraints in business and how to model them in Excel
- Use Solver to find optimal solution.

Due: Case #2 on Milligan Storage Inventory Tracking System

Session 8 – Introduction to Linear Programming (LP)

Questions: How do we find the optimal solution of a linear programming using Excel Solver? What are business problems where LP techniques can be applied?

Learning Outcomes: Optimization gives business a critical edge. You will learn that optimization is a powerful tool that can be applied to various business problems. You will be able to formulate a linear program (LP) and solve LP problems using Excel Solver.

- Recognize linear program as a special optimization tool
- Understand the components of a linear program
- Formulate linear programs and solve it using Excel solver
- Make decisions utilizing optimization to allocate resources effectively

Session 9 – Case3: Resource Allocation at Applichem

Questions: Using the data on operating performance at each plant and currency exchange rate, how do we build a linear program to determine the optimal resource allocation?

Learning Outcomes: You will practice how to formulate an LP for resource allocation that takes into account exchange rate between countries. We will work with the datasets from Case #3.

- Use data on transportation costs and operating performance to formulate an LP
- Solve the LP to hedge currency risk
- Calculate the expected production quantity at each plant and determine the shipment to each market that minimizes the total cost

Due: You will earn participation credits by submitting a half-page discussion of Case #3 by 6am on the day of this class via Blackboard. Case Preparation Questions:

- 1. Where the Applichem manufacturing plants located?
- 2. What are the challenges facing Applichem's manufacturing operations?

Module 4: Excel as a Programming Tool – Dynamic Charting of Finance Portfolio

Session 10 – Macros

Questions: How to create Macros in Excel

Learning Outcomes: You will learn how to use Macros in Excel. We will work with the datasets from Case #4.

• How to program in Excel using Macros

- Build Dynamic Charts in Excel
- Import Financial Data into Excel.

Due: Case3: Resource Allocation at Applichem

Quiz #2: Array Commands, Rank, Match, Offset and Dash Boards.

Session 11 – Case4: Dynamic Charting of Financial Portfolio

Questions: What are the 30-day, 60-day and 90-day financial Metrics of your portfolio?

Learning Outcomes: You will learn how to create dynamic charts in Excel using Macros. We will work with the datasets from Case #4.

- Macros Commands
- Assign a macro to a toolbar
- Modifying built-in menus, Macro commands,
- Viewing macro code, Custom functions, Procedures, Using macros in other files
- Recording to the personal macro workbook, Copying modules
- Referencing a macro file and Saving a macro file as an ADD-IN

Due: You will earn participation credits by submitting a half-page discussion of Case #4 by 6am on the day of this class via Blackboard. Case Preparation Questions:

- 1. What is a Macro?
- 2. What are the different ways to create Macros?

Session 12 – Case4: Dynamic Charting of Financial Portfolio - Continued

Module 5: Excel as an Analytics Tool: Using Built in Excel Statistical tools

Session 13 – Introduction to Google Adwords and Search-Based Advertising

Questions: What are search-based advertising services? How can businesses use search-based advertising to identify new customers?

Learning Outcomes: Your will learn about the Google Adwords program and search-based advertising services, and show how to convert unstructured data to structured data to segment keywords.

- Introduce the Google Adwords program
- Use text commands to convert unstructured data to structured data to segment keywords
- Understand how to model profits and losses associated with different keyword selections

Due: Case #4 on Dynamic Charting of Financial Portfolio

Quiz # 3: Linear Programming and Macros

Session 14 – Case 5: Online Marketing Using Google Adwords

Questions: What keywords should Smart Partyware consider in its campaign?

Learning Outcomes: You will apply simple segmentation techniques to identify the most appropriate keywords, predicts their cost, and evaluate the profitability of the resulting marketing campaign. We will work with the datasets from Case #5.

- Build a segmentation model to identify the appropriate keywords for a Google Adwords campaign
- Predict the cost associated with each keyword, conversion rate, and number of new customers.
- Calculate the expected revenue associated with your marketing campaign.

Due: You will earn participation credits by submitting a half-page discussion of Case #5 by 6am on the day of this class via Blackboard.

Case Preparation Questions:

- 1. Where is the first failure that Olga and Vijay discover? How would you fix it?
- 2. What is the second failure? And what is the resulting new paradigm?
- 3. What is the goal of the internet team?

Last Day of Class - Due: Case #5 on Online Marketing Using Google Adwords

Final Examination: No early finals are allowed by University policy.

Class	Date/Time	Location
ACAD179	ТВА	ТВА

	Topics/Daily Activities	Readings and Homework	Deliverable/ Due Dates
Session 1 Jan 13 th	Introduction to the Excel	Class Notes Posted in Blackboard and Course Pack – Case1	
Session 2 Jan 15 th	Introduction to Case 1: Customer Order Tracking System Feasibility Analysis	Class Notes Posted in Blackboard and Course Pack – Case1	
Session 3 Jan 20 th	Case1 : Customer Order Tracking System Feasibility Analysis		Due: You can earn participation credits by submitting a half-page

			discussion of Case #1 by 6am on the day of this class via Blackboard.
Session 4 Jan 22 nd	Array Commands in Excel	Class Notes Posted in Blackboard and Course Pack – Case2	Due: Case #1 on Customer Order Tracking System Feasibility Analysis
Session 5 Jan 27 th	Case2: Milligan Storage Inventory Tracking System	Class Notes Posted in Blackboard and Course Pack – Case2	Due: You can earn participation credits by submitting a half-page discussion of Case #2 by 6am on the day of this class via Blackboard.
Session 6 Jan 29 th	Case2: Milligan Storage Inventory Tracking System – Continued		Quiz # 1: Data Analysis in Excel
Session 7 Feb 3 rd	Advanced Excel Tools	Class Notes Posted in Blackboard and Course Pack – Case3	Due: Case #2 on Milligan Storage Inventory Tracking System
Session 8 Feb 5 th	Introduction to Linear Programming (LP)	Class Notes Posted in Blackboard and Course Pack – Case3	
Session 9 Feb 10 th	Case3: Resource Allocation at Applichem		Due: You can earn participation credits by submitting a half-page discussion of Case #3 by 6am on the day of this class via Blackboard.
Session 10 Feb 12 th	Macros	Class Notes Posted in Blackboard and Course Pack – Case4	Due: Case3: Resource Allocation at Applichem Quiz #2: Array Commands, Rank, Match, Offset and Dash Boards.
Session 11 Feb 17 th	Case4: Dynamic Charting of Financial Portfolio	Class Notes Posted in Blackboard and Course Pack – Case4	Due: You can earn participation credits by submitting a half-page discussion of Case #4 by 6am on the day of this class via Blackboard.
Session 12 Feb 19 th	Case4: Dynamic Charting of Financial		

	Portfolio - Continued		
Session 13 Feb 24 th	Introduction to Google Adwords and Search- Based Advertising	Class Notes Posted in Blackboard and Course Pack – Case5	Due: Case4: Dynamic Charting of Financial Portfolio Quiz #3: Array Commands, Rank, Match, Offset and Dash Boards
Session 14 Feb 27 th	Case 5: Online Marketing Using Google Adwords	Class Notes Posted in Blackboard and Course Pack – Case5	Due: You can earn participation credits by submitting a half-page discussion of Case #5 by 6am on the day of this class via Blackboard.
Last Day of Class March 3 rd			Due: Case 5: Online Marketing Using Google Adwords
FINAL March 5 th	Final Exam	Time To be Announced	Date: For the date and time of the final for this class, consult the USC Schedule of Classes at www.usc.edu/soc.