WASHINGTON COLLEGE

Course Syllabus
BUS203 -10 Quantitative Methods I
Spring 2013, MWF 12:30 p.m. – 1:20 p.m., Goldstein 100

Instructor: Stephen D. Winand, M.B.A.
Office: Daly 216 C
Office Hours: Monday and Wednesday, 11:00 a.m. – 12:00 p.m., and by
                     appointment.
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Text: Anderson, Sweeney, Williams, *Essentials of Modern Business Statistics with
        Microsoft Excel, 5e*, 2012

Course Description

How do business managers make decisions? Compare alternatives?   Determine best
strategies?

An important component of the decision making process is the use of statistical or
quantitative tools which allow the manager to make fact-based decisions. Quantitative
Methods I is the first of a two-part series on data analysis, models, and decision making
with business applications using Microsoft® Excel. In this first course, you will learn the
vocabulary of statistics, laying the foundation for communication and interpretation of
statistical information. You will also learn the role probability plays in decision-making
and the most commonly used statistical distributions, such as the normal curve. Finally,
you will learn sampling principles, learning how to take samples and how to effectively
use the data you gather.   The nature of the topic is cumulative; in other words, the skills
and concepts you acquire in this semester will be the foundation for the skills and
concepts you will learn next semester in Quantitative Methods II.

Course Learning Objectives

- ❖ To develop an understanding of **the role of statistics in business decision-
  making**
- ❖ To use Microsoft Excel to **analyze and accurately depict data**
- ❖ To **interpret the results** of the statistical analysis and **convey those results for
  appropriate decision making**
- ❖ To build a foundational facility with the **use of statistical techniques, tools and
  methods to handle complex problems**, specifically, using discrete and
  continuous probability distributions, and sampling distributions
- ❖ To strengthen **analytical and problem-solving skills**
- ❖ To strengthen **team and interpersonal skills**

Honor Code

All work submitted is required to have the following pledge attached to it, with your signature (s):

"I (we) pledge my (our) word of honor that I (we) have abided by the Washington College Honor Code while completing this assignment."

While I encourage you to study and work on homework together, the intent is that you help each other to understand the material, not supply answers to each other. All other work is to be your own individual effort, or the combined effort of members of your group. When you joined Washington College as a student, you pledged to uphold the Honor Code – I expect you to live up to your word.

Grading Components

Exam I	30%
Exam II	30%
Group Project	15%
Class Contribution	10%
Homework	10%
Quizzes	5%

Final grades will be computed using the weightings shown above. Letter grades will be determined using the following numerical conversions.

99 to 100 = A+	82 to 87.9 = B	70 to 71.9 = C-	59.9 or Below = F
92 to 98.9 = A	80 to 81.9 = B-	68 to 69.9 = D+	
90 to 91.9 = A-	78 to 79.9 = C+	62 to 67.9 = D	
88 to 89.9 = B+	72 to 78.9 = C	60 to 61.9 = D-	

I reserve the right to use subjective evaluation on the mastery of the subject matter to assign or remove +'s and -'s to grades beyond just the numerical calculation.

Grades will be posted on BlackBoard. Please review your grades throughout the semester and feel free to contact me if you have any questions. Exam and quiz grades are generally posted by the next class period; homework grades are posted the same day as homework is collected. The Group Project grade is generally posted a week after the project is turned in. Class participation is posted with final grades.

Exams

Exams are non-cumulative and administered via Blackboard, covering groups of chapters as noted on the accompanying schedule. You will be asked to demonstrate your knowledge and understanding of key terms, to apply statistical techniques to solve business problems, and to analyze the results of Excel-produced statistical output. **Exams will be "paper" exams** – while you may be asked to interpret Excel results, you will not use Excel to take the exams.

Group Project

Detailed information on the group project will be provided in a separate document. The group project will provide practical, hands-on experience in collecting, recording, organizing and analyzing data. You will be assigned randomly to groups, allowing you to burnish your team and interpersonal skills as part of the group process.

Attendance Policy

Attendance is mandatory. You need to come to class. The material in each class builds a foundation for subsequent material; therefore, missing classes means that you will not only miss concepts needed for both semesters, you might miss skills required in later courses such as Finance and Strategic Management. As a result, not coming to class will ultimately affect your grade in this or other related classes. You are allowed to miss class three times over the course of the semester for any reason. If you miss class more than three times, you will lose one percentage point of your final grade for each class missed, regardless of the reason for the absence. That might not sound like much but it could make a difference in your letter grade (ex. going from 90.2 to 89.2 means going from an A- to a B+).

Class Contribution also means being attentive, asking questions and actively participating in problem-solving and class discussion.

If you must be absent for some reason, it is your responsibility to complete assignments and get notes from other students. **Students on probation must attend all classes without exception.**

Any exception to this policy will be made on an individual basis.

Cell Phones

Cell phones should be turned off, set to vibrate or silent while in class. Ringing phones will disrupt concentration and interrupt the continuity of the class. Texting or game playing in class will not be viewed favorably. Your attention should be on the concepts being discussed. **If you are texting, playing games, or other cell phone use in class, you may be asked to leave the class.** Any assignments completed for credit will not be accepted or allowed to be made up.

Homework

Think of **homework problems as practice**, just like practice for sports or musical performances. **If you don't practice regularly and earnestly, it shows.** I encourage you to study together because you can help each other by thinking through the homework problems and discussing various methods of attack. But remember, if you simply rely on your study mates to solve problems, then they will be prepared for the exams, not you. **Each student is expected to create his or her own Excel spreadsheets**. Formatting of your spreadsheets is important. All excel work should be formatted to fit on a 8.5 x 11 sheet of paper with data labeled appropriately and the

problem it relates to clearly identified. <u>Failure to do so will result in a 10 point reduction in your homework grade.</u>

I will post the correct answers to the day's homework on blackboard for you to check your work, but, **You should come to class prepared** to demonstrate the solution of the problems, or prepared with specific questions about places where you encountered difficulty. It's not sufficient to say, "I don't know how to do this." Be specific on what you are having a problem with. **Here are a couple of good questions:** "I'm not sure how to find the correct inputs to the problem" "There are two equations that are very similar – how do I know which is the correct one to use?"

We have a lot of material to cover this semester and it is important that you keep up. And don't worry – if you have a question, then undoubtedly one or more of your classmates have the same question and they'll thank you for bringing it up! The Self Test questions at the end of most sections are very helpful in getting you started.

Record your homework in a bound notebook (this can be the same notebook you use for taking notes). I will review your homework notebooks usually on a bi weekly basis, collecting them at the end of Wednesday's class and making them available for you to pick up by noon the next day. <u>Make sure each assignment is clearly identified with the chapter and problem number.</u> If I have to be an interpreter, you will get no credit. I'll initial your completed homework and assign one of four grades:

√+	I see evidence that you completed or made a bona fide effort to complete the homework when assigned, and that you've gone back to make notes about areas that were clarified in class. Equivalent to 100%
√	You've completed the homework problems **in detail** but without notes. Equivalent to 75%.
√-	Minimum effort expended, some problems solved. Equivalent to 50%
0	Little or no effort to complete homework, illegible, or not turned in on time. Equivalent to 0%

 If you have to miss class on homework day, it is your responsibility to get your homework notebook to me so that I can review it during the allotted time. While you may turn in homework notebooks early - I will not accept them late.

<u>Quizzes</u>

Quizzes will be given randomly and unannounced throughout the semester. Quizzes will also be administered via Blackboard. You may use your notes and the textbook, and you may give help to or ask for help from your fellow students. **Because these quizzes are unannounced, you will need to be present in class in order to take them**. Grades for students not in class when the quiz is announced will be recorded as zero.
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<u>Learning Differences</u>

Students who are in need of special accommodations because of a documented learning disability or physical disability should see the Director of the Office of Academic Skills (2nd Floor, Miller Library).   Once approved, the accommodation plan will be

developed. It is the student's responsibility to share the accommodation plan with the instructor of the course prior to the due date for assignments.

Communications/Help from Your Instructor

Please check your email frequently; I occasionally send broadcast emails to clarify homework assignments or to announce schedule changes. I use Blackboard to post materials such as Power Points, handouts from class, and grades.

Your best **strategy for success** is to review new material before class, complete all of your assignments, and ask questions early and often. This is a problem-solving course – to do well, you will have to consistently invest the time in learning and applying the material. As with all four credit courses, you are expected to invest an average of three hours of work outside of class for every hour you spend in the classroom.

If you still have questions about the material, please feel free to visit with me, either during my office hours or by appointment. Remember that we also have both a Math Center and an office of Academic Skills where there are tutors who can help you.

		BUS203 QUANTITATIVE METHODS I - Spring 2013		
		Section 10 - MWF 12:30 p.m. - 1:20 p.m. Stephen D Winand M.B.A.		
		S C H E D U L E		
		SUBJECT TO CHANGE - CHANGES WILL BE ANNOUNCED IN CLASS		
Day	**Date**	**Chapter**	**Lecture Topics**	**Homework Assignments**
		INTRODUCTION, DATA and DESCRIPTIVE STATISTICS		
Monday	1/21/2013	Chapter 1: Data and Statistics	Course Overview; Review Syllabus	
Wednesday	1/23/2013		1.2 Data, 1.3 Data Sources,1.4 Descriptive Statistics, 1.5 Statistical Inference	11, 13
Friday	1/25/2013		1.3 Data Sources,1.4 Descriptive Statistics, 1.5 Statistical Inference1.6 Statistical Analysis Using Excel, Excel expectations	3,4, 5, (14 in class) 17,21
Monday	1/28/2013	Chapter 2: Descriptive Statistics	2.1 Frequency distributions, bar graph, pie chart	Section 2.1: 8
Wednesday	1/30/2013		2.1 Excel Workshop	Section 2.1: 5, 7, 9
Friday	2/1/2013		2.2 Summarizing quantitative data	Section 2.2: 11
Monday	2/4/2013		2.2 Summarizing quantitative data	Section 2.2: 15
Wednesday	2/6/2013		2.2 Excel Workshop	Section 2.2: 11, 21 (Using Excel)
Friday	2/8/2013		2.3 Stem and leaf	Section 2.3: 25, 27
Monday	2/11/2013		2.4 Cross-tabs/Scatter diagrams/trendlines	Section 2.4: 33,
Wednesday	2/13/2013		2.4 Excel Workshop	Section 2.4: 29, 35,36 (Using Excel)
Friday	2/15/2013	Chapter 3: Descriptive Statistics: Numerical Methods	3.1 Measures of location	
Monday	2/18/2013		3.1 Measures of location	Section 3.1: 3, 10, 11
Wednesday	2/20/2013		3.2 Measures of variability,	Section 3.2: 15, 17, 21
Friday	2/22/2013		3.1/3.2 Excel Workshop	Section 3.2: 15, 17, 21, 22 (Using Excel)
Monday	2/25/2013		3.3 Measures of shape, relative location, detecting outliers,	Section 3.3: 25, 31, 32
Wednesday	2/27/2013		3.4 Exploratory Data Analysis	Section 3.4: 41, 43
Friday	3/1/2013		3.5 Measures of Association - Correlation Coefficient 3.6 Weighted Mean (skip Grouped Data)	Section 3.5; 49, 51 and Section 3.6: 54, 55
Monday	3/4/2013	*Exam Review - Chapters 1-3*		
Wednesday	3/6/2013	**Exam I**		
		PROBABILITY		
Friday	3/8/2013	Assign group projects, Review Exam Results		
Monday	3/11/2013	**Spring Break - No Class**		
Wednesday	3/13/2013	**Spring Break - No Class**		
Friday	3/15/2013	**Spring Break - No Class**		
Monday	3/18/2013	Chapter 4: Introduction to Probability	4.1 Counting rules, permutations, combinations	Section 4.1: 3, 4, 9
Wednesday	3/20/2013		4.1 Assigning probabilities, 4.2 Events	Section 4.1: 5, 7 and Section 4.2: 17, 20
Friday	3/22/2013		4.3 Complements; Addition Law; Mutually Exclusive Events	Section 4.3: 22, 23, 27
Monday	3/25/2013		4.4 Joint Probability Table; Conditional probability	
Wednesday	3/27/2013	Group Project Work in Class		
Friday	3/29/2013		4.4 Multiplication Law	Section 4.4: 31, 33, 37
Monday	4/1/2013	Chap. 5: Discrete Probability Distributions	5.1 Discrete & continuous variables, 5.2 Discrete probability distributions	Section 5.1: 1, 6 and Section 5.2: 7, 9
Wednesday	4/3/2013	**Advising Day - No Class**		
Friday	4/5/2013		5.3 Expected Value	Section 5.3: 15, 19
Monday	4/8/2013		5.4 Binomial probability distribution	Section 5.4: 25, 31, 35
Wednesday	4/10/2013		5.5 Poisson probability distribution	Section 5.5: 38, 41, 43
Friday	4/12/2013	Chap. 6: Continuous Probability Distributions	6.1 Uniform probability distribution	Section 6.1: 1, 5, 7
Monday	4/15/2013	Group Project Due, Class Presentations		
Wednesday	4/17/2013	Class Presentations		
Friday	4/19/2013		6.2 Normal probability distribution	
Monday	4/22/2013		6.2 Standard normal probability distribution	Section 6.2; 9, 10, 14, 15
Wednesday	4/24/2013		6.2 Standard normal probability distribution	
Friday	4/26/2013		6.2 Computing probabilities	Section 6.2: 17, 21, 24, 25
Monday	4/29/2013		6.3 Exponential Probability Distribution	Section 6.3: 27, 29, 31
Wednesday	5/1/2013	*Exam Review - Chapters 4-6*		
		Exam II		