# Course Description

The use of statistics in business will be explored. Topics covered include measures of averages and dispersions, probability theory and distributions, sampling, tests of hypothesis, and regression and correlation.

# Course Outcomes

* **CLO1**: Demonstrate computation and application of descriptive statistical techniques to summarize data to support business decisions (LO2, LO3, LO5)
* **CLO2**: Evaluate inferential statistical techniques to support business decisions. (LO3, LO5)
* **CLO3**: Utilize Microsoft Excel® to analyze data and communicate information. (LO3, LO6)
* **CLO4**:Analyze probabilities for business decision making. (LO3, LO5)

# School of Business Learning Outcomes (LO)

* **LO1**: The ability to produce business related papers using APA format. (*GMCLO1)*
* **LO2**: The ability to clearly and effectively prepare written business communications. (*GMCLO1)*
* **LO3**: Business students will apply knowledge and skills to make appropriate business decisions. *(GMCLO2, GMCLO6)*
* **LO4**: The student will be able to apply ethical and moral decision-making principles to business situations. *(GMCLO3)*
* **LO5**: The student will display appropriate quantitative problem-solving abilities in the context of a business problem. *(GMCLO4)*
* **LO6**: The student will demonstrate the ability to use appropriate technological skills required for business professionals. *(GMCLO7)*
* **LO7**: The student will demonstrate the ability to find, evaluate, and apply sources of information relevant to business issues and situations. *(GMCLO5)*

**Program Learning Outcomes (PLO)**

* **PLO1**: The ability to clearly and effectively prepare written business communications. (ULO 1, 2, 4)
* **PLO2**: Business students will apply knowledge and skills to make appropriate business decisions. (ULO 1, 2, 3, 4)
* **PLO3**: The student will be able to apply ethical and moral decision-making principles to business situations. (ULO 2, 3, 4)
* **PLO4**: The student will demonstrate decision-support tools required for business professionals. (ULO 2, 3, 4)
* **PLO5:** The student will demonstrate the ability to find, evaluate, and apply sources of information relevant to business issues and situations. (ULO 1, 2, 4)

**University Learning Outcomes (ULO)**

* **ULO1:** Knowledge of Human Cultures and the Physical and Natural World
* **ULO2:** Intellectual and Practical Skills
* **ULO3:** Personal and Social Responsibility
* **ULO4:** Integrative and Applied Learning­
* **ULO5:** Immersed in the Critical Concerns of the Sisters of Mercy of the Americas

**Student Expectations**

Students are expected to:

* Ask probing and insightful questions related to course content.
* Make meaningful and relevant connections and application to their own learning process.
* Be productive and contributing members of class discussions.
* Complete learning assignments and assessments by the due date indicated in the course.

# Required Course Materials

*Statistics For Managers: A Cognitive Apprenticeship Approach*, 2008, Ronald R Bruce.

This textbook is offered free of charge and available when you access Blackboard.

Students need to have access to a Windows-based computer with Microsoft Excel.

\*Headsets *with* a microphone (*e.g. cellphone headset, video game headset etc.*) that connect to the computer is needed to participate in web conferences. If you only have a headset without a microphone, you are able to listen to the conference, but cannot communicate verbally. In this case, you may use the Chat feature provided in web conference.

# Suggested Point Values

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Assessment** | **Point Value** | **Due** |
| **Week 1** | |  |  |
|  | Participation: (Learning Activities) | 20 | <insert due date> |
|  | Discussion Question 1 | 10 | <insert due date> |
|  | Week 1 Assignment | 20 |  |
|  | Week 1 Quiz | 50 |  |
| **Week 2** | |  |  |
|  | Participation: (Learning Activities) | 20 | <insert due date> |
|  | Discussion Question 1 | 10 |  |
|  | Home Price Descriptive Statistics | 20 |  |
|  | Week 2 Assignment | 30 |  |
|  | Week 2 Quiz | 50 |  |
| **Week 3** | |  |  |
|  | Participation | 30 | <insert due date> |
|  | Discussion Question 1 | 10 |  |
|  | Discussion Question 2 | 10 |  |
|  | Week 3 Assignment | 40 |  |
| **Week 4** | |  |  |
|  | Participation | 20 | <insert due date> |
|  | Discussion Question 1 | 10 |  |
|  | Discussion Question 2 | 10 |  |
|  | Week 4 Assignment | 30 |  |
| Week 4 Quiz | 50 |  |
| **Week 5** | |  |  |
|  | Participation | 20 | <insert due date> |
|  | Discussion Question 1 | 10 |  |
|  | Discussion Question 2 | 10 |  |
|  | Week 5 Assignment | 30 |  |
|  | Week 5 Quiz | 50 |  |
| **Week 6** | |  |  |
|  | Participation | 20 | <insert due date> |
|  | Discussion Question 1 | 10 |  |
|  | Week 6 Assignment | 30 |  |
|  | Week 6 Quiz | 60 |  |
| **Week 7** | |  |  |
|  | Participation | 20 | <insert due date> |
|  | Discussion Question 1 | 10 |  |
|  | Week 7 Assignment | 30 |  |
|  | Final Inferential Project | 20 |  |
|  | Week 7 Quiz | 50 |  |
| **Total Points** | | **810** |  |

# Course Schedule

|  |  |  |
| --- | --- | --- |
| **Week** | **Start** | **End** |
| One | <insert start date> | <insert end date> |
| Two |  |  |
| Three |  |  |
| Four |  |  |
| Five |  |  |
| Six |  |  |
| Seven |  |  |

# Weekly Learning Modules

|  |  |  |  |
| --- | --- | --- | --- |
| Week One: Collecting, Identifying and Summarizing Data | |  | |
| ***Learning Objectives*** | | ***Alignment*** | |
| * 1. Differentiate between a population and a sample. | | CLO1, 2 | |
| * 1. Categorize variables by type and level of measurement. | | CLO1, 2 | |
| * 1. Construct a frequency distribution and histogram that conforms to good communication principles. | | CLO1, 3 | |
| * 1. Use Microsoft Excel® to create a frequency distributions and charts to support a business decision. | | CLO3 | |
| ***Required Learning Resources and Activities****: Students must complete any resources activities listed in this section as selected by the instructor.* | | ***Alignment*** | ***Pages/AIE/***  ***Generic*** |
| **Read** Chapter 1 of *Statistics for Managers*. | | 1.1, 1.2 |  |
| **Read** Chapter 2 of *Statistics for Managers*. | | 1.3, 1.4 |  |
| **Creating a Frequency Distribution in Excel**  **Watch** the following video on creating frequency distributions using Excel at <http://screencast.com/t/xqiEmWQErE> | | 1.3, 1.4 |  |
| **Accessing Excels Analysis Tools**  **Watch** the following video to enable Excel’s analysis tools at <http://screencast.com/t/kVBfauu8fY9> | | 1.4 |  |
| **Week 1 Lecture Video**  **Watch** theWeek 1 Lecture video.  **Post** one thing that you learned from the video. Include anything that you found challenging in after watching the video.  \* *Note:* Get extra credit if able to answer or assist other students in their question. | | 1.1, 1.2, 1.3, 1.4 | Lecture Activity = **1 hour** |
| **Class Survey**  This activity requires you to survey 10 people outside of the classroom. The information gathered will be used in later assignments for this course. Documents related to the survey activity is located in the Class Survey Materials folder in Blackboard.  **Read** the Survey Entry Instructions and the Survey Worksheet to get an overview of the assignment requirements.  **Download** the Survey Handout and have 10 people fill out the questions. Try to get a mixture of ages to complete the survey.  **Enter** the survey results into the worksheet using the coding guideline located within the Survey Handout.  **Submit** your Survey Worksheet by the end of Week 1.  *Note:* At the end of Week 1, your instructor will combine all survey results into one data file which will be posted to the Class Survey Materials folder. Refer to this data file for different assignments and for the final project. | | 1.3, 1.4 | Guided Project = **1 hour** |
| **Week 1 Practice Problems**  **Download** the Week 1 Practice Problems.  **Complete** the Week 1 Practice Problems. Place all answers into a single word file. Use the readings and presentation to assist you in solving the problems as best you can.  **Post** your answers to the discussion board for Week 1 Practice Problems before the Adobe Connect conference session Thursday. If you are unable to attend the conference, submit your answers to your instructor.  *Note*: Remember that you are being graded on the quality of effort, not the accuracy. | | 1.1, 1.2, 1.3, 1.4 | Lecture Activity = **1 hour** |
| **Web Conference**  **Participate** in weekly web conferences using Adobe Connect. This session is held every Thursday from <<Enter start time>> to <<Enter end time>> EST. You are required to either attend this session or watch a recording of the session.  **Click** the web conference link provided by your instructor during the designated meeting time.  **Use** these sessions to ask any questions or concerns you have in completing the weekly practice problems. If you are unable to attend the conference call, a recorded version will be available and posted by the instructor after the meeting. | | 1.1, 1.2, 1.3, 1.4 | Web-Conferencing = **1 hour** |
| ***Assignment****: Students must complete the weekly assignment(s).* | | ***Alignment*** | ***Points/AIE/***  ***Generic*** |
| **Discussion Question 1**  **Review** the Charts document and answer the question.  **Post** your answer within the body of the post Blackboard, *not* as an attachment. Provide your rationale to your answer in 50- to 100-words.  **Respond** to three other students on why you may or may not agree with their solution. | | 1.3, 1.4 | Discussion Board = **1 hour** |
| **Week 1 Assignment**  **Review** the Week 1 Assignment document and the Home Price Database file.  **Submit** your answers and summary to your instructor. | | 1.3, 1.4 | Problem Solving = **2 hour** |
| **Week 1 Quiz**  **Complete** the Week 1 Quiz. | | 1.1, 1.2, 1.3, 1.4 | Quiz = **1 hour** |
| **Total** |  |  | **8 hours** |
| **Notes** |  | | |

**Faculty Notes**

**Class Survey:** For this assignment, students have 10 people fill out a survey questionnaire which they will submit to you as part of a Learning Activity. Compile all of the survey responses into one data file and post this into the Class Survey Materials folder in Blackboard for students to view by the end of Week 1. This data file will be used in various assignments throughout the course.

**Lecture Video:** Each week students will watch a lecture video and are asked to post what they learned and if they have any questions. Students that answer or assist another student during this discussion will be given extra credit. If you choose to remove the extra credit option for students, please remove that verbiage within this document.

**Web Conference:** Each week you will hold a web conference to go over assignment questions, and prep students for the quiz. The day proposed in the directions are on Thursdays, you may change this day but it is recommended that you provide ample time for students to complete the Practice Problems before the web conference. Use the Adobe Connect account provided by Gwynedd-Mercy University to hold your web conferences. Through Adobe Connect, you are able to share your desktop with your students to show and explain how to work through a problem. Use the account login information provided by the university and provide a copy of the link to your students. Ask students to login as a guest and enter their names where appropriate.

Enter the conference times you are able to hold each week within the designated instruction of this document. It is recommended that you enter the same conference time each week to keep things consistent for students. Record every synchronous conference session to allow students, who cannot attend the conference, to access the lecture at a later time.

If you need training on Adobe Connect, please contact Susan Darlington.

**Week 1 Web Conference Agenda:**

* Introduction to Adobe Connect
* Review solutions to Week 1 Practice Problems.
* Introduction Week 1 Assignment problems and quiz.

|  |  |  |  |
| --- | --- | --- | --- |
| Week Two: Averages and Dispersion | |  |  |
| ***Learning Objectives*** | | ***Alignment*** | |
| * 1. Interpret the mean, weighted mean, median, and modefor populations and samples. | | CLO1 | |
| * 1. Interpret the range, standard deviation and coefficient of variationfor populations and samples. | | CLO1 | |
| * 1. Use Microsoft Excel® to compute descriptive statistics. | | CLO3 | |
| * 1. Apply the Empirical Rule. | | CLO1 | |
| ***Required Learning Resources and Activities****: Students must complete any resources activities listed in this section as selected by the instructor.* | | ***Alignment*** | ***Pages/AIE/***  ***Generic*** |
| **Read** Chapter 3 of *Statistics for Managers*. | | 2.1 |  |
| **Read** Chapter 4 of *Statistics for Managers*. | | 2.2, 2.4 |  |
| **Using the Analysis Tools to Compute Descriptive Statistics**  **Watch** the tutorial on how to use the analysis tools in Excel to compute descriptive statistics at <http://screencast.com/t/SMearIjMe> | | 2.3 |  |
| **Week 2 Lecture Video**  **Watch** theWeek 2 Lecture video.  **Post** one thing that you learned from the video. Include anything that you found challenging in after watching the video.  \* *Note:* Get extra credit if able to answer or assist other students in their question. | | 2.1, 2.2, 2.3, 2.4 | Lecture Activity = **1 hour** |
| **Week 2 Practice Problems**  **Complete** the Week 2 Practice Problems. Use the readings and presentation to assist you in solving the problems as best you can.  **Post** the Week 2 Practice Problems before the Adobe Connect conference session Thursday.  *Note*: Remember that you are being graded on the quality of work, not the accuracy. | | 2.1, 2.2, 2.3, 2.4 | Lecture Activity = **1 hour** |
| **Web Conference**  **Participate** in weekly web conferences using Adobe Connect. This session is held every Thursday from <<Enter start time>> to <<Enter end time>> EST. You are required to either attend this session or watch a recording of the session.  **Click** the web conference link provided by your instructor during the designated meeting time.  **Use** these sessions to ask any questions or concerns you have in completing the weekly practice problems. If you are unable to attend the conference call, a recorded version will be available and posted by the instructor after the meeting. | | 2.1, 2.2, 2.3, 2.4 | Web-Conferencing = **1 hour** |
| **Descriptive Statistics**  In Week 1, you submitted a survey using responses from 10 different people. Your instructor will compile all the survey responses taken from the class into one data file which will be posted to the class.  **Use** the data file provided by your instructor to compute descriptive statistics using Excel.  **Submit** your findings. | | 2.3 | Guided Project = **1 hour** |
| ***Assignment****: Students must complete the weekly assignment(s).* | | ***Alignment*** | ***Points/AIE/***  ***Generic*** |
| **Discussion Question 1**  **Review** the statistics for people in the United States within the Country Survey DQ1. Notice that some of the variables are similar to the Class Survey activity in Week 1.    **Refer** to your calculations in the Descriptive Statistics for the Week 2 Learning Activity (i.e. activity above).  **Pick** one variable and compare the results of the class survey (i.e. data file posted by your instructor) with the results from the Country Survey DQ 1.  **Describe** how your results match or do not match the results for all Americans. If your results do not match, present an explanation for why there might be a difference.  **Respond** to at least three other students posts on what you find interesting about their findings. | | 2.1 | Discussion Board = **1 hour** |
| **Home Price Descriptive Statistics**  **Review** the Home Price Database file.  **Compute** the descriptive statistics for each variable in the file using Excel.  **Write** a 200- to 250-word summary on the typical home that was sold in this town (e.g. typical location, square footage, etc.). | | 2.1, 2.3 | Problem Solving = **1 hour** |
| **Week 2 Assignment**  **Review** the Week 2 Assignment document and solve each problem.  **Submit** your answers. | | 2.1, 2.2 | Problem Solving = **1 hour** |
| **Week 2 Quiz**  **Complete** the Week 2 Quiz. | | 2.1, 2.2, 2.4 | Quiz = **1 hour** |
| **Total** |  |  | **8 hours** |
| **Notes** |  | | |

**Faculty Notes**

**Descriptive Statistics:** The survey results you compiled, should already be posted for students by the end of Week 1. Make sure to direct students to this data file in order to complete this assignment.

**Lecture Video:** Each week students will watch a lecture video and are asked to post what they learned and if they have any questions. Students that answer or assist another student during this discussion will be given extra credit. If you choose to remove the extra credit option for students, please remove that verbiage within this document.

**Web Conference:** Each week you will hold a web conference to go over assignment questions, and prep students for the quiz. The day proposed in the directions are on Thursdays, you may change this day but it is recommended that you provide ample time for students to complete the Practice Problems before the web conference. Use the Adobe Connect account provided by Gwynedd-Mercy University to hold your web conferences. Through Adobe Connect, you are able to share your desktop with your students to show and explain how to work through a problem. Use the account login information provided by the university and provide a copy of the link to your students each week within Blackboard. Ask students to login as a guest and enter their names where appropriate.

Enter the conference times you are able to hold each week within the designated instruction of this document. It is recommended that you enter the same conference time each week to keep things consistent for students. Record every synchronous conference session to allow students, who cannot attend the conference, to access the lecture at a later time.

If you need training on Adobe Connect, please contact Susan Darlington.

**Week 2 Web Conference Agenda:**

* Review solutions to Week 1 Quiz and Assignment.
* Review Week 2 Practice Problems solutions.
* Introduce Week 2 Assignment.

|  |  |  |  |
| --- | --- | --- | --- |
| Week Three: Computing Probabilities | |  |  |
| ***Learning Objectives*** | | ***Alignment*** | |
| * 1. Utilize classical and relative frequency methods to calculate the probability of single events. | | CLO4 | |
| * 1. Use addition and multiplication of probabilities to calculate the probability of complex events. | | CLO4 | |
| * 1. Employ counting techniques to identify the number of outcomes to an experiment. | | CLO4 | |
| ***Required Learning Resources and Activities****: Students must complete any resources activities listed in this section as selected by the instructor.* | | ***Alignment*** | ***Pages/AIE/***  ***Generic*** |
| **Read** Chapter 5 of *Statistics for Managers*. | | 3.1, 3.2, 3.3 |  |
| **Week 3 Lecture Video**  **Watch** theWeek 3 Lecture video.  **Post** one thing that you learned from the video. Include anything that you found challenging in after watching the video.  \* *Note:* Get extra credit if able to answer or assist other students in their question. | | 3.1, 3.2, 3.3 | Lecture Activity = **1 hour** |
| **Week 3 Practice Problems**  **Complete** the Week 3 Practice Problems. Use the readings and presentation to assist you in solving the problems as best you can.  **Post** the Week 3 Practice Problems before the Adobe Connect conference session Thursday.  *Note*: Remember that you are being graded on the quality of work, not the accuracy. | | 3.1, 3.2, 3.3 | Lecture Activity = **1 hour** |
| **Web Conference Call**  **Participate** in weekly web conferences using Adobe Connect. This session is held every Thursday from <<Enter start time>> to <<Enter end time>> EST. You are required to either attend this session or watch a recording of the session.  **Click** the web conference link provided by your instructor during the designated meeting time.  **Use** these sessions to ask any questions or concerns you have in completing the weekly practice problems. If you are unable to attend the conference call, a recorded version will be available and posted by the instructor after the meeting. | | 3.1, 3.2, 3.3 | Web-Conferencing = **1 hour** |
| ***Assignment****: Students must complete the weekly assignment(s).* | | ***Alignment*** | ***Points/AIE/***  ***Generic*** |
| **Discussion Question 1**  The probability that a person wins a hand of Blackjack playing the basic strategy is .41. Bill walks into a casino and wins the first 6 hands of Blackjack that he plays in a row.  Do you think that this is evidence that he is cheating? Please make an argument using probabilities.  *Note:* Additional points if showing calculations.  **Respond** to at least three other students posts on what you find interesting about their findings. | | 3.1 | Discussion Board = **1 hour** |
| **Discussion Question 2**  For this discussion, consider how probability is used in real world scenarios and how they can be solved.  **Post** a real world probability problem for your classmates to solve.  **Respond** to at least three other students’ posts by answering the probability problems they post. Then provide an answer for your problem with rationale to the solution.  *Note:* You will be graded on the quality of thought. | | 3.1, 3.2, 3.3 | Discussion Board = **1 hour** |
| **Week 3 Assignment**  **Review** the Week 3 Assignment document and solve each problem.  **Submit** your answers. | | 3.1, 3.2, 3.3 | Problem Solving = **2 hour** |
| **Total** |  |  | **7 hours** |
| **Notes** |  | | |

**Faculty Notes**

**Discussion Question 1:** Students are given extra credit in this discussion if they are able to show their calculations. If you choose to remove this option, please update the instructions where appropriate.

**Week 3 Web Conference Agenda:**

* Review solutions to Week 2 Quiz and Assignment.
* Review Week 3 Practice Problems solutions.
* Introduce Week 3 Assignment.

|  |  |  |  |
| --- | --- | --- | --- |
| Week Four: Probability Distributions | |  |  |
| ***Learning Objectives*** | | ***Alignment*** | |
| * 1. Define probability distributions. | | CLO4 | |
| * 1. Interpret the expected value of a probability distribution. | | CLO4 | |
| * 1. Use Microsoft Excel® to construct binomial probability distributions. | | CLO4 | |
| * 1. Interpret probabilities using the normal probability distribution. | | CLO4 | |
| ***Required Learning Resources and Activities****: Students must complete any resources activities listed in this section as selected by the instructor.* | | ***Alignment*** | ***Pages/AIE/***  ***Generic*** |
| **Read** Chapter 6 of *Statistics for Managers*. | | 4.1, 4.2, 4.3 |  |
| **Read** Chapter 7 of *Statistics for Managers*. | | 4.4 |  |
| **Week 4 Lecture Video**  **Watch** theWeek 4 Lecture video.  **Post** one thing that you learned from the video. Include anything that you found challenging in after watching the video.  \* *Note:* Get extra credit if able to answer or assist other students in their question. | | 4.1, 4.2, 4.3, 4.4 | Lecture Activity = **1 hour** |
| **Week 4 Practice Problems**  **Complete** the Week 4 Practice Problems. Use the readings and presentation to assist you in solving the problems as best you can.  **Post** the Week 4 Practice Problems before the Adobe Connect conference session Thursday.  *Note*: Remember that you are being graded on the quality of work, not the accuracy. | | 4.1, 4.2, 4.3, 4.4 | Lecture Activity = **2 hours** |
| **Web Conference Call**  **Participate** in weekly web conferences using Adobe Connect. This session is held every Thursday from <<Enter start time>> to <<Enter end time>> EST. You are required to either attend this session or watch a recording of the session.  **Click** the web conference link provided by your instructor during the designated meeting time.  **Use** these sessions to ask any questions or concerns you have in completing the weekly practice problems. If you are unable to attend the conference call, a recorded version will be available and posted by the instructor after the meeting. | | 4.1, 4.2, 4.3, 4.4 | Web-Conferencing = **1 hour** |
| ***Assignment****: Students must complete the weekly assignment(s).* | | ***Alignment*** | ***Points/AIE/***  ***Generic*** |
| **Discussion Question 1**  A trial is conducted in an area that has a 30% minority population. The jury pool of 30 prospective jurors has only 6 minority representatives. The defense attorney claims that this is evidence that the jury pool was not selected randomly.  **Use** the binomial distribution to evaluate the defense attorney’s claim of bias. Make sure that you us probability computation to support your answers.  **Respond** to three other students’ posts on why you may or may not agree with their findings. | | 4.1, 4.3 | Discussion Board = **1 hour** |
| **Discussion Question 2**  **Choose** a game that is generally played in a casino. You can search this information online, either through the library or the other online source.  *Note:* You must choose a game that has not been posted by another student*.* There are various versions of one type of game (e.g. different types of poker games and the various game machines).  **Research** further on the game details and actions.  **Report** on the expected value of the various wagers that can be made for that game.  **Respond** to three other student’s posts regarding the game they have chosen. Comment on any personal experience that you have seen with those games that fellow students have posted about. | | 4.2 | Discussion Board = **1 hour** |
| **Week 4 Assignment**  **Review** the Week 4 Assignment document for instructions.  **Submit** your answers. | | 4.2, 4.3, 4.4 | Problem Solving = **1 hour** |
| **Week 4 Quiz**  **Complete** the Week 4 Quiz. | | 4.1, 4.2, 4.3, 4.4 | Quiz = **1 hour** |
| **Total** |  |  | **8 hours** |
| **Notes** |  | | |

**Faculty Notes**

**Week 4 Web Conference Agenda:**

* Review solutions to Week 3 Quiz and Assignment.
* Review Week 4 Practice Problems solutions.
* Introduce Week 4 Assignment.

|  |  |  |  |
| --- | --- | --- | --- |
| Week Five: Sampling Distributions and Estimation | |  |  |
| ***Learning Objectives*** | | ***Alignment*** | |
| * 1. Recognize methods of statistical sampling. | | CLO2 | |
| * 1. Explain sampling distribution, sampling error, and the central limit theorem. | | CLO2 | |
| * 1. Interpret confidence intervals for population means and proportions. | | CLO2, 3 | |
| * 1. Determine the appropriate sample size for confidence intervals for means and proportions. | | CLO2 | |
| ***Required Learning Resources and Activities****: Students must complete any resources activities listed in this section as selected by the instructor.* | | ***Alignment*** | ***Pages/AIE/***  ***Generic*** |
| **Read** Chapter 8 of *Statistics for Managers*. | | Week 5 |  |
| **Using Excel to Construct a Confidence Interval**  **Watch** the tutorial on constructing a confidence interval using Excel at <http://screencast.com/t/FqcAJfwOWF89> | | 5.3 |  |
| **Week 5 Lecture Video**  **Watch** theWeek 5 Lecture video.  **Post** one thing that you learned from the video. Include anything that you found challenging in after watching the video.  \* *Note:* Get extra credit if able to answer or assist other students in their question. | | 5.1, 5.2, 5.3, 5.4 | Lecture Activity = **1 hour** |
| **Week 5 Practice Problems**  **Complete** the Week 5 Practice Problems. Use the readings and presentation to assist you in solving the problems as best you can.  **Post** the Week 5 Practice Problems before the Adobe Connect conference session Thursday.  *Note*: Remember that you are being graded on the quality of work, not the accuracy. | | 5.1, 5.2, 5.3, 5.4 | Lecture Activity = **2 hour** |
| **Web Conference Call**  **Participate** in weekly web conferences using Adobe Connect. This session is held every Thursday from <<Enter start time>> to <<Enter end time>> EST. You are required to either attend this session or watch a recording of the session.  **Click** the web conference link provided by your instructor during the designated meeting time.  **Use** these sessions to ask any questions or concerns you have in completing the weekly practice problems. If you are unable to attend the conference call, a recorded version will be available and posted by the instructor after the meeting. | | 5.1, 5.2, 5.3, 5.4 | Web-Conferencing = **1 hour** |
| ***Assignment****: Students must complete the weekly assignment(s).* | | ***Alignment*** | ***Points/AIE/***  ***Generic*** |
| **Discussion Question 1**  **Read** the transcript below about an interview regarding exit polling at the 2004 elections.  <http://www.pbs.org/newshour/bb/politics/july-dec04/exitpolls_11-05.html>  **Discuss** the following points after reading the transcript:   * What type of sampling are the exit pollsters using? * Why might this type of sampling lead to bias in the reported results? * Is it ethical to do exit polling if the results might leak and influence the election?   **Review** the responses of three other students and discuss if you agree or disagree. Provide rationale. | | 5.1 | Discussion Board = **1 hour** |
| **Discussion Question 2**  Suppose a researcher wants to take a sample of students at Gwynedd-Mercy University. Gwynedd has a number of distinct groups of students, traditional day and adult students, resident and commuter students, main campus students and students at East Norriton, Bensalem, and Philadelphia campuses and exclusively online students.  **Describe** a sampling method that would enable you to take a probability sample of students at Gwynedd. Provide rationale.  **Post** a response to three of your classmates, describe any sampling bias that may be present in their method. | | 5.1 | Discussion Board = **1 hour** |
| **Week 5 Assignment**  **Review** the Week 5 Assignment document for instructions.  **Submit** your answers. | | 5.3, 5.4 | Problem Solving = **1 hour** |
| **Week 5 Quiz**  **Complete** the Week 5 Quiz. | | 5.1, 5.2, 5.3, 5.4 | Quiz = **1 hour** |
| **Total** |  |  | **8 hours** |
| **Notes** |  | | |

**Faculty Notes**

**Week 5 Web Conference Agenda:**

* Review solutions to Week 4 Quiz and Assignment.
* Review Week 5 Practice Problems solutions.
* Introduce Week 5 Assignment.

|  |  |  |  |
| --- | --- | --- | --- |
| Week Six: Hypothesis Testing | |  |  |
| ***Learning Objectives*** | | ***Alignment*** | |
| * 1. Explain null and alternative hypothesis, Type I and Type II Error, and level of significance. | | CLO2 | |
| * 1. Perform hypothesis tests for population means and proportions for large samples. | | CLO2 | |
| * 1. Perform hypothesis tests for population means using the t-distribution using Microsoft Excel®. | | CLO2, 3 | |
| ***Required Learning Resources and Activities: Students must complete any resources activities listed in this section as selected by the instructor.*** | | ***Alignment*** | ***Pages/AIE/***  ***Generic*** |
| **Read** Chapter 9 of *Statistics for Managers*. | | 6.1, 6.2, 6.3 |  |
| **Using Excel to do a t-Test**  **Watch** the tutorial on using Excel to compare two samples in a t-Test at <http://screencast.com/t/6xga4P78vAq> | | 6.3 |  |
| **Week 6 Lecture Video**  **Watch** theWeek 6 Lecture video.  **Post** one thing that you learned from the video. Include anything that you found challenging in after watching the video.  \* *Note:* Get extra credit if able to answer or assist other students in their question. | | 6.1, 6.2, 6.3 | Lecture Activity = **1 hour** |
| **Week 6 Practice Problems**  **Complete** the Week 6 Practice Problems. Use the readings and presentation to assist you in solving the problems as best you can.  **Post** the Week 6 Practice Problems before the Adobe Connect conference session Thursday.  *Note*: Remember that you are being graded on the quality of work, not the accuracy. | | 6.2,6.3 | Lecture Activity = **2 hour** |
| **Web Conference Call**  **Participate** in weekly web conferences using Adobe Connect. This session is held every Thursday from <<Enter start time>> to <<Enter end time>> EST. You are required to either attend this session or watch a recording of the session.  **Click** the web conference link provided by your instructor during the designated meeting time.  **Use** these sessions to ask any questions or concerns you have in completing the weekly practice problems. If you are unable to attend the conference call, a recorded version will be available and posted by the instructor after the meeting. | | 6.1, 6.2, 6.3 | Web-Conferencing = **1 hour** |
| **Total** |  |  | **4 hours** |
| ***Assignment: Students must complete the weekly assignment(s).*** | | ***Alignment*** | ***Points/AIE/***  ***Generic*** |
| **Discussion Question 1**  **Read** the Vioxx article.  **Respond** to the following:  **Share** your thoughts on how the study could have led to the conclusion reached by the Merck researchers that Vioxx and Naproxin had similar risks regarding heart disease. Provide explanation and include the concept of power and money.  **Respond** to three other students on whether you agree or disagree with their reasoning. Provide other possible reasons to explain the results. | | 6.1 | Discussion Board = **1 hour** |
| **Week 6 Assignment**  **Review** the Week 6 Assignment document for instructions.  **Submit** your answers. | | 6.2,6.3 | Problem Solving = **2 hour** |
| **Week 6 Quiz**  **Complete** the Week 6 Quiz. | | 6.1, 6.2, 6.3 | Quiz = **1 hour** |
| **Total** |  |  | **8 hours** |
| **Notes** |  | | |

|  |  |  |  |
| --- | --- | --- | --- |
| Week Seven: Linear Regression and Correlation | |  |  |
| ***Learning Objectives*** | | ***Alignment*** | |
| * 1. Determine the dependent and independent variables in a bivariate situation. | | CLO1 | |
| * 1. Create a scatter diagram in Microsoft Excel®. | | CLO1, CLO3 | |
| * 1. Interpret a linear regression equation using Microsoft Excel®. | | CLO1, CLO3 | |
| * 1. Interpret the coefficient of correlation and determination using Microsoft Excel®. | | CLO1, CLO3 | |
| * 1. Evaluate the significance of the relationship of variables in a regression. | | CLO2, CLO3 | |
| ***Required Learning Resources and Activities****: Students must complete any resources activities listed in this section as selected by the instructor.* | | ***Alignment*** | ***Pages/AIE/***  ***Generic*** |
| **Read** Chapter 10 of *Statistics for Managers*. | | 7.1, 7.2, 7.3, 7.4, 7.5 |  |
| **Using Excel to do Regression and Correlation**  **Watch** the tutorial on using Excel to do regression and correlation at <http://screencast.com/t/1zAsRWR6Ga> | | 7.4, 7.5 |  |
| **Week 7 Lecture Video**  **Watch** theWeek 7 Lecture video.  **Post** one thing that you learned from the video. Include anything that you found challenging in after watching the video.  \* *Note:* Get extra credit if able to answer or assist other students in their question. | | 7.1, 7.2, 7.3, 7.4, 7.5 | Lecture Activity = **1 hour** |
| **Week 7 Practice Problems**  **Complete** the Week 7 Practice Problems. Use the readings and presentation to assist you in solving the problems as best you can.  **Post** the Week 7 Practice Problems before the Adobe Connect conference session Thursday.  *Note*: Remember that you are being graded on the quality of work, not the accuracy. | | 7.1, 7.2, 7.3, 7.4, 7.5 | Lecture Activity = **2 hour** |
| **Web Conference Call**  **Participate** in weekly web conferences using Adobe Connect. This session is held every Thursday from <<Enter start time>> to <<Enter end time>> EST. You are required to either attend this session or watch a recording of the session.  **Click** the web conference link provided by your instructor during the designated meeting time.  **Use** these sessions to ask any questions or concerns you have in completing the weekly practice problems. If you are unable to attend the conference call, a recorded version will be available and posted by the instructor after the meeting. | | 7.1, 7.2, 7.3, 7.4, 7.5 | Web-Conferencing = **1 hour** |
| **Total** |  |  | **4 hours** |
| ***Assignment****: Students must complete the weekly assignment(s).* | | ***Alignment*** | ***Points/AIE/***  ***Generic*** |
| **Discussion Question 1**  Which of the statistical techniques have the most usefulness for a business of interest or the job that you are currently in? What is the technique and why is it useful to the business or job?  **Respond** to three other students’ posts explaining if the technique they chose is useful to your current job or a business of interest. Explain why or why not. | | 7.1, 7.2, 7.3, 7.4, 7.5 | Discussion Board = **1 hour** |
| **Week 7 Assignment**    **Review** the Week 7 Assignment document for instructions.  **Submit** your answers. | | 7.1, 7.2, 7.3, 7.4, 7.5 | Problem Solving = **1 hour** |
| **Final Inferential Project**  **Complete** Final Inferential Project | | 6.3, 7.1, 7.2, 7.3, 7.4, 7.5 | Final Project = **1 hour** |
| **Week 7 Quiz**  **Complete** the Week 7 Quiz. | | 7.1, 7.2, 7.3, 7.4, 7.5 | Quiz = **1 hour** |
| **Total** |  |  | **8 hours** |
| **Notes** |  | | |

# Breakdown of Academic Instructional Equivalencies

|  |  |  |
| --- | --- | --- |
|  |  |  |
| **Week 1** |  |  |
| Required |  |  |
| Supplemental |  |  |
|  |  |  |
| **Week 2** |  |  |
| Required |  |  |
| Supplemental |  |  |
|  |  |  |
| **Week 3** |  |  |
| Required |  |  |
| Supplemental |  |  |
|  |  |  |
| **Week 4** |  |  |
| Required |  |  |
| Supplemental |  |  |
|  |  |  |
| **Week5** |  |  |
| Required |  |  |
| Supplemental |  |  |
|  |  |  |
| **Week 6** |  |  |
| Required |  |  |
| Supplemental |  |  |
|  |  |  |
| **Week 7** |  |  |
| Required |  |  |
| Supplemental |  |  |
|  |  |  |
|  |  |  |
| **Total Required Hours** |  |  |
| **Total Supplemental Hours** |  |  |
| **Total Hours** |  |  |