# Course Description

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

**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

**Program Learning Outcomes (PLO)**

For full descriptions of the Program Learning Outcomes please refer to the catalog.

* Bachelors of Science in Business Administration
* Bachelors of Science in Business Health Administration

# Course Learning Outcomes (CLO)

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

**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

Anderson, D. R., Sweeney, D. J., & Williams, T. A. (2016). *Essentials of modern business statistics with Microsoft Office Excel* (6th ed.). Mason, OH: South-Western/Cengage Learning.

# Suggested Point Values

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Assessment** | **Point Value** | **Due** |
| **Week 1** | |  |  |
|  | Participation | 10 | <insert due date> |
|  | Week 1 DQ 1 | 10 | <insert due date> |
|  | Week 1 Assignment | 25 |  |
| **Week 2** | |  |  |
|  | Participation | 10 | <insert due date> |
|  | Week 2 DQ 1 | 10 |  |
|  | Week 2 Assignment | 25 |  |
|  | Week 2 Quiz | 40 |  |
| **Week 3** | |  |  |
|  | Participation | 10 | <insert due date> |
|  | Week 3 DQ 1 | 10 |  |
|  | Week 3 DQ 2 | 10 |  |
|  | Week 3 DQ 3 | 10 |  |
|  | Week 3 Assignment | 25 |  |
| **Week 4** | |  |  |
|  | Participation | 10 | <insert due date> |
|  | Week 4 DQ 1 | 10 |  |
|  | Week 4 DQ 2 | 10 |  |
|  | Week 4 Assignment | 25 |  |
| Week 4 Quiz | 30 |  |
| **Week 5** | |  |  |
|  | Participation | 10 | <insert due date> |
|  | Week 5 DQ 1 | 10 |  |
|  | Week 5 DQ 2 | 10 |  |
|  | Week 5 DQ 3 | 10 |  |
|  | Week 5 Assignment | 35 |  |
| **Total Points** | | **355** |  |

# Course Schedule

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

# Weekly Learning Modules

|  |  |  |  |
| --- | --- | --- | --- |
| Week One: Collecting, Identifying, and Summarizing Data | |  | |
| ***Learning Objectives*** | | ***Alignment*** | |
| * 1. Differentiate between a population and a sample. | | CLO1 | |
| * 1. Categorize variables by type and level of measurement. | | CLO1, 2 | |
| * 1. Interpret the descriptive statistics including the mean, weighted mean, median, and modefor populations and samples. | | CLO1, 2 | |
| * 1. Use Microsoft® Excel® to create frequency distributions and charts to support a business decision. | | CLO1, 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** Ch. 1, 2, & 3 of *Essentials of Modern Business Statistics With Microsoft Office Excel*.  **Read** the Basic Descriptive Statistics document. | | 1.1, 1.2, 1.3, 1.4 |  |
| **Introductions**  **Introduce** yourself to the class by completing all of the following statements:   1. My name is . 2. I am currently employed as a and currently work for . 3. My undergraduate major is . 4. I’m good at . 5. I’m not so good at . 6. The most amazing thing that ever happened to me was . 7. I live by the principle . 8. In 5 years, I want to . 9. If I were not taking this course right now, I would be . 10. My worst fear relative to taking this course is . 11. My greatest hope relative to taking this course is .   **Cut** and paste the statements with your responses into a new post.  **Post** your completed statements to the Introductions discussion thread.  **Review** other students and respond to them by relating how you are similar to each other. | | N/A | Discussion = **1 hour** |
| **Videos**  **Review** the following videos as a refresher on using Excel. You do not have to view all videos but it should help to familiarize you with the program.   * “Excel 2013 Statistical Analysis” [2:22:42mins]: <https://www.youtube.com/watch?v=R0GjjPvswlQ&list=PLrRPvpgDmw0ngx_uPhvasTbOWLOztsaBj&index=2> * “Excel 2013 Statistical Analysis for Business & Economics Playlist of Videos”: <https://www.youtube.com/playlist?list=PLrRPvpgDmw0ngx_uPhvasTbOWLOztsaBj> * “Excel 2010 Tutorial: Comprehensive Part 1 of 2” [1:01:13mins]: <https://www.youtube.com/watch?v=Ft05yQUOej4>   **Post** any questions or insight into the Week 1 Questions forum. | | 1.1, 1.3, 1.4 | Lecture Activity = **2 hours** |
| **Week 1 Lecture Videos**  **Watch** thefollowingWeek 1 lecture videos:   * “Collecting, Identifying and Summarizing Data” [16:44mins]: <https://vimeo.com/123755507> * “Descriptive Statistics and Measures of Dispersion” (Part 1 of 2) [9:21mins]: <https://vimeo.com/149897314> * “Descriptive Statistics and Measures of Dispersion” (Part 2 of 2) [14:58mins]: <https://vimeo.com/150684501>   **Post** to the Week 1 Questions forum one thing that you learned from the videos. Include anything that you found challenging after watching the videos. | | 1.1, 1.2, 1.3 | Lecture Activity = **1 hour** |
| **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 [1:32mins]: <http://screencast.com/t/SMearIjMe>.  **Post** any questions or insight to the Week 1 Discussion forum. | | 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 state 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*** |
| **Week 1 DQ 1**  Each week, you will have a discussion that matches the description below, however, specific to the respective week. This is a two-part discussion in which you provide a detailed example of a decision-making situation using statistics for Part I, and then you critically analyze for Part II.  **Part I**  **Provide** an example of a current decision-making situation (professional or personal life), where it is potentially beneficial to apply the **descriptive statistics** technique(s) examined in the current week. Be sure to include mean, weighted mean, median, and mode for populations and samples in your response.  A chosen example should involve a decision-making process that is complex with important outcomes. Your post is expected to address all of the following matters:   * Description of the situation in detail, including the complexity, the importance, and the manner in which decisions are currently being made * Explanation of how you envision being able to apply the proposed quantitative analysis technique(s) to the described situation * Analysis of how you envision applying the proposed quantitative analysis technique(s) may potentially improve decision-making relative to the described situation * Details of the potential benefit(s) that you believe would be derived from improving decision-making relative to the described situation * Explanation of any potential impediments to applying the proposed quantitative analysis technique(s) to the described situation that you might foresee, and how you envision potentially being able to overcome them   **Post** a message of at least 350 words to include the appropriate details within the discussion forum.  **Part II**  **Select** an original post from Part I made by two other students.  **Analyze** and evaluate the chosen posts.  **Post** a response of 175 to 200 words to **each** of the selected original posts that address all of the following matters:   * Discuss in detail your opinion(s) regarding whether or not you believe the proposed quantitative analysis technique is appropriate for application to the situation discussed in the post. * In the event you believe the proposed quantitative analysis technique is appropriate for application to the situation discussed in the post, discuss in detail your opinion(s) regarding the strengths and weaknesses associated with the proposed application of the quantitative analysis technique(s) relative to the situation discussed in the post. Conversely, in the event you believe the proposed quantitative analysis technique is not appropriate for application to the situation discussed in the post, then discuss in detail why you believe this to be the case. * Discuss in detail which of the other quantitative analysis technique(s) examined to date during the course you would recommend be considered for application to the situation either in lieu of, or in addition to, the quantitative analysis technique(s) proposed in the post, including discussing in detail the relative advantages of applying your proposed alternative quantitative analysis technique(s) to the situation. In the event you do not believe that any of the alternate quantitative analysis technique(s) examined thus far during the course would be applicable to the situation discussed in the post, then discuss in detail why you believe this to be the case.   *Note*: Initial answers to the question are due by 11:59 p.m. (Eastern time) on Thursday. All responses must be posted by 11:59 p.m. (Eastern time) on Sunday. | | 1.1, 1.2, 1.3 | Discussion Board = **2 hours** |
| **Week 1 Assignment**  **Complete** the Week 1 Assignment document using Word or Excel.  **Submit** your answers to your instructor. | | 1.2, 1.3, 1.4 | Problem Solving = **2 hours** |
| **Total** |  |  | **10 hours** |
| **Notes** |  | | |

**Faculty Notes**

**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 is Thursday. 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 log in 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
* Introduction Discussion Question format and Week 1 Assignment problems – Answer any questions.

|  |  |  |  |
| --- | --- | --- | --- |
| Week Two: Introduction to Probability | |  |  |
| ***Learning Objectives*** | | ***Alignment*** | |
| * 1. Demonstrate competency in basic probability techniques. | | CLO1, 3, 4 | |
| * 1. Utilize classical and relative frequency methods to calculate the probability of single events. | | CLO4 | |
| * 1. Employ counting techniques to identify the number of outcomes to an experiment. | | 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** Ch. 4 of *Essentials of Modern Business Statistics With Microsoft Office Excel*.  **Read** the Counting Principles document. | | 2.1, 2.2, 2.3 |  |
| **Week 2 Lecture Video**  **Watch** the following Week 2 lecture videos:   * “Probability” (Part 1 of 3) [7:24mins]: <https://vimeo.com/150684191> * “Probability” (Part 2 of 3) [12:52mins]: <https://vimeo.com/150685307> * “Probability” (Part 3 of 3) [7:44mins]: <https://vimeo.com/149902807>   **Post** one thing to the Week 2 Questions forum about what you learned from the videos. Include anything that you found challenging after watching the videos. | | 2.1, 2.2, 2.3 | Lecture Activity = **2 hours** |
| **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 state 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, | Web-Conferencing = **2 hours** |
| ***Assignment****: Students must complete the weekly assignment(s).* | | ***Alignment*** | ***Points/AIE/***  ***Generic*** |
| **Week 2 DQ 1**  This is a two-part discussion in which you provide a detailed example of a decision-making situation using statistics for Part I, and then you critically analyze for Part II.  **Part I**  **Provide** an example of a current decision-making situation (professional or personal life), where it is potentially beneficial to apply the **probability** technique(s) examined in the current week. Be sure to include mean, weighted mean, median, and mode for populations and samples in your response.  A chosen example should involve a decision-making process that is complex with important outcomes. Your post is expected to address all of the following matters:   * Description of the situation in detail, including the complexity, the importance, and the manner in which decisions are currently being made * Explanation of how you envision being able to apply the proposed quantitative analysis technique(s) to the described situation * Analysis of how you envision applying the proposed quantitative analysis technique(s) may potentially improve decision-making relative to the described situation * Details of the potential benefit(s) that you believe would be derived from improving decision-making relative to the described situation * Explanation of any potential impediments to applying the proposed quantitative analysis technique(s) to the described situation that you might foresee, and how you envision potentially being able to overcome them   **Post** a message of at least 350 words to include the appropriate details within the discussion forum.  **Part II**  **Select** an original post from Part I made by two other students.  **Analyze** and evaluate the chosen posts.  **Post** a response of 175 to 200 words to **each** of the selected original posts that address all of the following matters:   * Discuss in detail your opinion(s) regarding whether or not you believe the proposed quantitative analysis technique is appropriate for application to the situation discussed in the post. * In the event you believe the proposed quantitative analysis technique is appropriate for application to the situation discussed in the post, discuss in detail your opinion(s) regarding the strengths and weaknesses associated with the proposed application of the quantitative analysis technique(s) relative to the situation discussed in the post. Conversely, in the event you believe the proposed quantitative analysis technique is not appropriate for application to the situation discussed in the post, then discuss in detail why you believe this to be the case. * Discuss in detail which of the other quantitative analysis technique(s) examined to date during the course you would recommend be considered for application to the situation either in lieu of, or in addition to, the quantitative analysis technique(s) proposed in the post, including discussing in detail the relative advantages of applying your proposed alternative quantitative analysis technique(s) to the situation. In the event you do not believe that any of the alternate quantitative analysis technique(s) examined thus far during the course would be applicable to the situation discussed in the post, then discuss in detail why you believe this to be the case.   *Note*: Initial answers to the question are due by 11:59 p.m. (Eastern time) on Thursday. All responses must be posted by 11:59 p.m. (Eastern time) on Sunday. | | 2.1, 2.2 | Discussion Board = **2 hours** |
| **Week 2 Assignment**  **Review** the Week 2 Assignment document and solve each problem.  **Submit** your answers. | | 2.1, 2.2, 2.3 | Problem Solving = **1 hour** |
| **Week 2 Quiz**  **Complete** the Week 2 Quiz. | | 2.1, 2.2, 2.3 | Quiz = **1 hour** |
| **Total** |  |  | **8 hours** |
| **Notes** |  | | |

**Faculty Notes**

**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 is Thursday. 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 log in 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.
* Introduce Week 2 Assignment and answer any questions.

|  |  |  |  |
| --- | --- | --- | --- |
| Week Three: Computing Probabilities | |  |  |
| ***Learning Objectives*** | | ***Alignment*** | |
| * 1. Identify discrete and continuous probability distribution techniques. | | CLO3, 4 | |
| * 1. Demonstrate competency in probability distributions, including normal, binomial, Poisson, and exponential. | | CLO3, 4 | |
| ***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** Ch. 5 & 6 of *Essentials of Modern Business Statistics With Microsoft Office Excel*.  **Read** the following articles:   * “Probability Distribution” * “Basic Probability” * “Probability Example 1” * “Probability Example 2” | | 3.1, 3.2 |  |
| **Statistics in Daily Life**  Math and statistics are part of our everyday lives even without our knowing it.  **Review** the following link for some examples by clicking on the different movie scenes depicting how statistics can be used: <http://www.math.harvard.edu/~knill/mathmovies/>.  Be sure to click on the direct media links. The following are some movie clips listed within the site:   * *The Double*: Statistic lessons on hypothesis and p-value * *Moneyball*: Equations and statistics on analysis of baseball players * *Butterfly Dreaming*: Probability of two raindrops hitting the same leaf   **Post** any new insight for any videos that you found interesting that relates to probabilities to the Week 3 Questions forum. | | 3.1 | Lecture Activity = **1 hour** |
| **Week 3 Lecture Video**  **Watch** the following Week 3 lecture videos:   * “Probability Distributions” (Part 1 of 2) [9:37mins]: <https://vimeo.com/150687911> * “Probability Distributions” (Part 2 of 2) [12:08mins]: <https://vimeo.com/150687910>   **Post** one thing to the Week 3 Questions forum about what you learned from the videos. Include anything that you found challenging after watching the videos. | | 3.1, 3.2 | Lecture Activity = **1 hour** |
| **Web Conference Call**  **Read** the Practice Examples 1 and 2. Ask questions about these examples to prep for this week’s assignment.  **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 state 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 | Web-Conferencing = **2 hours** |
| ***Assignment****: Students must complete the weekly assignment(s).* | | ***Alignment*** | ***Points/AIE/***  ***Generic*** |
| **Week 3 DQ 1**  **Post** a clear and logical response in 150 to 200 words to the following questions/prompts, providing specific examples to support your answers.   * Think about examples of how using probability distribution could affect ethics. What are the ethical concerns with capitalizing *using* probability distribution techniques? Provide an example of using probability distribution techniques.   *Note*: Initial answers to the question are due by 11:59 p.m. (Eastern time) on Thursday.  **Respond** to at least threestudents as to what you agree or disagree with in their answers in a manner that is thought provoking and appropriately challenges or elevates the discussion. All responses must be posted by 11:59 p.m. (Eastern time) on Sunday. | | 3.1, 3.2 | Discussion Board = **1 hour** |
| **Week 3 DQ 2**  **Pos**t a clear and logical response in 150 to 200 words to the following questions/prompts, providing specific examples to support your answers.  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? Make an argument using probabilities and include points about dependent and independent events.   *Note*: Initial answers to the question are due by 11:59 p.m. (Eastern time) on Thursday.  **Respond** to at least threestudents as to what you agree or disagree with in their answers in a manner that is thought provoking and appropriately challenges or elevates the discussion. All responses must be posted by 11:59 p.m. (Eastern time) on Sunday. | | 3.1 | Discussion Board = **1 hour** |
| **Week 3 DQ 3**  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. Use normal or binomial distribution within the problem.  **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*: Initial answers to the question are due by 11:59 p.m. (Eastern time) on Thursday. All responses must be posted by 11:59 p.m. (Eastern time) on Sunday. | | 3.1, 3.2 | Discussion Board = **1 hour** |
| **Week 3 Assignment**  **Review** the Week 3 Assignment document and solve each problem using Excel.  **Submit** your answers. | | 3.1, 3.2 | Problem Solving = **2 hours** |
| **Total** |  |  | **9 hours** |
| **Notes** |  | | |

**Faculty Notes**

**Week 3 Web Conference Agenda:**

* Review solutions to Week 2 Quiz and Assignment.
* Introduce Week 3 Assignment and answer questions.

|  |  |  |  |
| --- | --- | --- | --- |
| Week Four: Sampling Distribution and Hypothesis Testing | |  |  |
| ***Learning Objectives*** | | ***Alignment*** | |
| * 1. Define sampling distributions. | | CLO1, 2, 4 | |
| * 1. Calculate the difference in the population mean with a known standard deviation verses an unknown standard deviation. | | CLO1, 2, 3 | |
| * 1. Identify the value in the structure of hypothesis testing. | | CLO1, 2 | |
| ***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** Ch. 7, 8, & 9 of *Essentials of Modern Business Statistics With Microsoft Office Excel*. | | 4.1, 4.2, 4.3 |  |
| **Week 4 Lecture Video**  **Watch** the following Week 4 lecture video:   * “Sampling Distribution and Estimation” [23:47mins]: <https://vimeo.com/150688055>   **Post** to the Week 4 Questions forum one thing that you learned from the video. Include anything that you found challenging after watching the video. | | 4.1 | 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 state 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 | Web-Conferencing = **1.5 hour** |
| ***Assignment****: Students must complete the weekly assignment(s).* | | ***Alignment*** | ***Points/AIE/***  ***Generic*** |
| **Week 4 DQ 1**  This is a two-part discussion in which you provide a detailed example of a decision-making situation using statistics for Part I, and then you critically analyze for Part II.  **Part I**  **Provide** an example of a current decision-making situation (professional or personal life). Choose a topic that relates to sampling distribution or hypothesis testing. Select a situation that involves a decision-making process that is both complex and involves important outcomes. Be sure to include mean, weighted mean, median, and mode for populations and samples in your response.  A chosen example should involve a decision-making process that is complex with important outcomes. Your post is expected to address all of the following matters:   * Description of the situation in detail, including the complexity, the importance, and the manner in which decisions are currently being made * Explanation of how you envision being able to apply the proposed quantitative analysis technique(s) to the described situation * Analysis of how you envision applying the proposed quantitative analysis technique(s) may potentially improve decision-making relative to the described situation * Details of the potential benefit(s) that you believe would be derived from improving decision-making relative to the described situation * Explanation of any potential impediments to applying the proposed quantitative analysis technique(s) to the described situation that you might foresee, and how you envision potentially being able to overcome them   **Post** a message of at least 350 words to include the appropriate details within the discussion forum.  **Part II**  **Select** an original post from Part I made by two other students.  **Analyze** and evaluate the chosen posts.  **Post** a response of 175 to 200 words to **each** of the selected original posts that address all of the following matters:   * Discuss in detail your opinion(s) regarding whether or not you believe the proposed quantitative analysis technique is appropriate for application to the situation discussed in the post. * In the event you believe the proposed quantitative analysis technique is appropriate for application to the situation discussed in the post, discuss in detail your opinion(s) regarding the strengths and weaknesses associated with the proposed application of the quantitative analysis technique(s) relative to the situation discussed in the post. Conversely, in the event you believe the proposed quantitative analysis technique is not appropriate for application to the situation discussed in the post, then discuss in detail why you believe this to be the case. * Discuss in detail which of the other quantitative analysis technique(s) examined to date during the course you would recommend be considered for application to the situation either in lieu of, or in addition to, the quantitative analysis technique(s) proposed in the post, including discussing in detail the relative advantages of applying your proposed alternative quantitative analysis technique(s) to the situation. In the event you do not believe that any of the alternate quantitative analysis technique(s) examined thus far during the course would be applicable to the situation discussed in the post, then discuss in detail why you believe this to be the case.   *Note*: Initial answers to the question are due by 11:59 p.m. (Eastern time) on Thursday. All responses must be posted by 11:59 p.m. (Eastern time) on Sunday. | | 4.1, 4.2, OR 4.3 | Discussion Board = **2 hours** |
| **Week 4 DQ 2**  **Watch** the following video:   * “The best stats you’ve ever seen” [19:50mins]: <https://www.ted.com/talks/hans_rosling_shows_the_best_stats_you_ve_ever_seen?language=en>   **Pos**t a clear and logical response in 150 to 200 words to the following questions/prompts, providing specific examples to support your answers.   * How is statistics used in the video? In your response, include structured hypothesis for both your perception before and after watching the video. Did you notice any differences?   *Note*: Initial answers to the question are due by 11:59 p.m. (Eastern time) on Thursday.    **Respond** to at least threestudents as to what you agree or disagree with their answers in a manner that is thought provoking and appropriately challenges or elevates the discussion. All responses must be posted by 11:59 p.m. (Eastern time) on Sunday. | | 4.1, 4.3 | Discussion Board = **2 hours** |
| **Week 4 Assignment**  **Review** the Week 4 Assignment document for instructions.  **Submit** your answers. | | 4.1, 4.2, 4.3 | Problem Solving = **1 hour** |
| **Week 4 Quiz**  **Complete** the Week 4 Quiz. | | 4.1, 4.2, 4.3, | Quiz = **1 hour** |
| **Total** |  |  | **8.5 hours** |
| **Notes** |  | | |

**Faculty Notes**

**Week 4 Web Conference Agenda:**

* Review solutions to Week 3 Quiz and Assignment.
* Introduce Week 4 Assignment and answer questions.

|  |  |  |  |
| --- | --- | --- | --- |
| Week Five: Sampling Distributions and Estimation | |  |  |
| ***Learning Objectives*** | | ***Alignment*** | |
| * 1. Explain how the experimental design is applied in business settings. | | CLO1, 2 | |
| * 1. Examine the differences between populations. | | CLO1, 2 | |
| * 1. Utilize Excel to setup and quantify qualitative data. | | CLO1, 2, 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** Ch. 10 of *Essentials of Modern Business Statistics With Microsoft Office Excel*.  Additional supplemental reading for further understanding:   * Ch. 12 of *Essentials of Modern Business Statistics With Microsoft Office Excel*. | | 5.1, 5.2 |  |
| **Using Excel to Construct a Confidence Interval**  **Watch** the tutorial on constructing a confidence interval using Excel [1:44mins] at <http://screencast.com/t/FqcAJfwOWF89>.  **Post** to the Week 5 Questions forum one thing that you learned from the video. Include anything that you found challenging after watching the video. | | 5.3 | Lecture Activity = **1 hour** |
| ***Assignment****: Students must complete the weekly assignment(s).* | | ***Alignment*** | ***Points/AIE/***  ***Generic*** |
| **Week 5 DQ1**  Math and statistics are part of our everyday lives even without our knowing it.  **Review** the following video “United Stats of America 2012 Season 1 Episode 1” [39:44mins]: <https://www.youtube.com/watch?v=Z_WqL6WOVuY>  **Find** the most intriguing statistics that you observed in the video. Write a hypothesis where you could test those statistics. Provide an overview of the type of information you would need to support the hypothesis.  **Post** your finding in 150 to 200 words.  **Respond** to at least threestudents discussing the validity of the statistical information shown. Explain whether or not there is a lack of supporting information to verify the statistics.  *Note*: Initial answers to the question are due by 11:59 p.m. (Eastern time) on Thursday. All responses must be posted by 11:59 p.m. (Eastern time) on Sunday. | | 4.3, 5.1 | Discussion Board = **2 hours** |
| **Week 5 DQ 2**  **Post** a clear and logical response in 150 to 200 words to the following questions/prompts, providing specific examples to support your answers.   * Suppose a researcher is analyzing a market, and wants to take a sample of potential customers in a large metropolitan region. Describe how it may or may not be a good representation of the population if you took a sample from a nine block segment of the metropolitan area. Provide ways to support the validity of the research. * Describe a sampling method that would enable you to take a sample that better represents the population. Provide rationale.   **Response** to at least three students describing any sampling bias that may be present in other students’ methods.  *Note*: Initial answers to the question are due by 11:59 p.m. (Eastern time) on Thursday. All responses must be posted by 11:59 p.m. (Eastern time) on Sunday. | | 5.1, 5.2 | Discussion Board = **1.5 hour** |
| **Week 5 DQ 3**  **Post** a clear and logical response in 150 to 200 words to the following questions/prompts, providing specific examples to support your answers.   * 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?   *Examples*:   * Value added in your career of your bachelor’s education on your income: Discuss in terms of national income average for that position in relation to the current minimum wage. * A person compares degree programs of local universities based on average total cost of tuition and provides a hypothesis of what a person would expect to find in their population.   **Respond** to three other students’ posts explaining if the technique they chose is useful to your current job or business of interest. Explain why or why not.  *Note*: Initial answers to the question are due by 11:59 p.m. (Eastern time) on Thursday. All responses must be posted by 11:59 p.m. (Eastern time) on Sunday. | | VARIES | Discussion Board = **1 hour** |
| **Week 5 Assignment**  **Review** the Week 5 Assignment document for instructions.  **Submit** your answers. | | 5.1, 5.2, 5.3 | Problem Solving = **1 hour** |
| **Total** |  |  | **6.5 hours** |
| **Notes** |  | | |

# Breakdown of Academic Instructional Equivalencies

|  |  |  |
| --- | --- | --- |
|  |  |  |
| **Week 1** |  |  |
| Required | 10 |  |
| Supplemental |  |  |
|  |  |  |
| **Week 2** |  |  |
| Required | 8 |  |
| Supplemental |  |  |
|  |  |  |
| **Week 3** |  |  |
| Required | 9 |  |
| Supplemental |  |  |
|  |  |  |
| **Week 4** |  |  |
| Required | 8.5 |  |
| Supplemental |  |  |
|  |  |  |
| **Week5** |  |  |
| Required | 6.5 |  |
| Supplemental |  |  |
|  |  |  |
|  |  |  |
| **Total Required Hours** | 42 |  |
| **Total Supplemental Hours** |  |  |
| **Total Hours** | 42 |  |