



MG-348-1 Data Analysis for Health Care Managers

The mission of Albertus Magnus College is to provide men and women with an education that promotes the search for truth in all its dimensions and is practical in its application.

In this course, students will be introduced to the analytic tools needed to understand and assess the data collected by health care organizations. Students will learn how various healthcare data sets are constructed and utilized by health care managers for efficient and effective decision-making. The students will apply these techniques and interpret case study data.

Prerequisite: BE-202.

PROGRAM AND COURSE OFFERING INFORMATION

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| Program: | Bachelor of Science in Health Care Management |
| Session: | Mod |
| Class Meetings: | Attendance taken upon Assignment submission on Tuesday & Thursday 11:55 pm |
| Delivery method: | Online |
| Number of Credits: | 3 |
| Textbook: | Lewis, J., & McGrath, R. (2011). <i>Essentials of applied quantitative methods for health services managers</i> . Sudbury, Mass.: Jones and Bartlett. ISBN: 978-0-7637-5871-4 |

INSTRUCTOR INFORMATION

Name: Dr. Nabil S. Elias

Contact Info: **E-mail:** nelias@albertus.edu
Phone: 203 773 8582
Texting: 860 655 0271 (*only in case of emergency*)
Office Hours: Wednesday 3:00 – 5:00 PM, otherwise an appointment can be made through a phone call, a text message (*for emergencies only*), or an e-mail.

Instructor Biography:

- A Doctor of Medicine, also holding EMD and MBA degrees, and mastering three languages,
- Specializing in Health Care and Pharmaceutical industries,
- Thirty-year international experience in different disciplines of business and management,
- Provided strategic support to more than twelve markets in an overseas multi-cultural region,
- Managed and/or participated in different pilot monitoring and evaluation, communication, educational/training and public awareness projects.
- Teaching management and business subjects,
- Providing management consultation to some US firms,

GENERAL INSTRUCTIONS

Tradition of Honor: As a member of the Albertus Magnus College Community, each student taking this course agrees to uphold the principles of honor set forth by this community, to defend these principles against abuse or misuse, and to abide by the regulations of the College. To this end, every student must write and sign the following statement at the end of each examination: *“I declare the Honor Pledge.”*

Intellectual Honesty: Plagiarism is a serious offense against academic integrity and intellectual honesty. In completing written assignments, the student must work independently unless the class instructor indicates otherwise. It is important for students to understand that they must reference the sources for all direct quotes, for the rephrasing of information from an outside source, and for ideas borrowed from readings. Students will be required to use APA format when referencing sources. Failure to cite appropriate references in any of these instances results in an act of plagiarism, intentional or unintentional. If it has been determined that a student plagiarized a written assignment, the student may be dismissed from the program. The instructor will report instances of plagiarism to the college administration.

Writing Guidelines: The writing guidelines for this course will follow the American Psychological Association’s (APA) style format standards. Referenced pages must be correctly formatted and alphabetized; sources must be appropriate to the assignment, correctly cited, and traceable; and the number of citations and sources must be adequate for each paper. Citing your sources properly requires following the APA style format rules.

Appropriate Classroom Conduct:

Students are expected to show a respect for order, the rights of others, and to exemplify a sense of honor and integrity in the classroom. Student conduct is considered an integral part of the educational process. Therefore, no student should be denied the right to learn as a direct result

of disruptions in the classroom. Active learning, open inquiry, and the free expression of informed opinion are the foundations of a liberal education at Albertus Magnus College. However, student behavior that interferes with an instructor's ability to conduct the class is prohibited. Students are expected to be considerate and respectful of the rights, views, and interests of other students and faculty. The faculty member will take appropriate action if students do not abide by these rules.

Accommodations for Special Needs: Please advise the instructor of any special problems or needs at the beginning of the semester. Those students seeking reasonable accommodations based on disabilities should contact the Director of Academic and Student Disability Services, Aquinas Hall, Room 114 at (203) 672-1050, or email asejdic@albertus.edu, to obtain a Faculty Accommodation Letter. Albertus Magnus College complies with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act.

In order to respect the independence, rights and dignity of students with disabilities, the College initiates services only after a student makes a voluntary disclosure of a disability to the Office of Academic and Student Disability Services. Students who are approved for accommodations are responsible for approaching instructors in a timely manner to provide faculty accommodation letters and to arrange how accommodations will be implemented. Accommodations cannot be retroactive, so we strongly advise students to make accommodation appointments as soon as possible.

In providing reasonable accommodations, the College shall not fundamentally alter the nature of programs, services, or activities; require waiver of essential academic standards or violate accreditation requirements.

Library and Information Services Component:

You may wish to use additional resources available at Albertus Magnus College Library at Rosary Hall in completing the assignments. There are several databases which the College subscribes to that can be extremely helpful researching course assignments and are available by remote internet access through the Albertus Magnus College Library. Gaining access to these resources is accomplished easily through the AMC website, by logging in "*myAlbertus*".

Online Course Etiquette:

Please click the following link to review the Albertus policies regarding proper etiquette for interaction in all blended and online course work: [Link to Albertus' Netiquette Guide](#)

Withdrawing from a Course: It is the responsibility of the student to officially drop or withdraw from a course. However, failure to attend a course for 14 calendar days may result in an administrative withdrawal from the course. The policies on course withdrawals and administrative withdrawals may be found online at

<http://www.albertus.edu/policy-reports/academic-policies-regulations-eug#apgr>

Albertus Magnus College Definition of a Credit Hour: Albertus Magnus College adheres to the definition of a credit hour in compliance with and as defined by [NECHE commission policy](#).

NECHE's definition of a credit hour is as follows:

The Commission defines a credit hour as an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutional established equivalence that reasonably approximates not less than –

- (1) One hour of classroom or direct faculty instruction and a minimum of two hours of out of class student work each week for approximately fifteen weeks for one semester or trimester hour of credit, or ten to twelve weeks for one quarter hour of credit, or the equivalent amount of work over a different amount of time; or
- (2) At least an equivalent amount of work as required in paragraph (1) of this definition for other academic activities as established by the institution including laboratory work, internships, practica, studio work, and other academic work leading to the award of credit hours.

COURSE GRADING AND ATTENDANCE POLICIES

Course Grading and Attendance Policies:

The distant Learning Format: For the DL format, all the “meetings” are taking place online within the eLearning system (emails, postings, and forums). Lectures will be posted online weekly as slide presentations/shows and students will be provided with some questions to which they must respond after reading the text and viewing the slide shows. Students will also be asked to respond and provide feedback to the postings of their colleagues in a weekly “forum” platform. Likewise, the assignments will be posted online which enables students to reflect, to research, and to think critically. Other students (from both formats) will have the opportunity to respond and provide feedback to the assignment. Interactive discussions online allow students a convenient and effective way to develop their management skills and knowledge, learn from others, and prepare for roles in health care management. Students are expected to participate and to complete online case study and desk search assignments in a weekly “forum” platform.

Expectations Regarding Assignments' Due Dates: Students are expected to complete all the course requirements as assigned, and to submit the weekly assignment by the designated time and date, posted on eLearning. You may also submit postings prior to the due date. **NO LATE SUBMISSIONS WOULD BE ACCEPTED.** The postings demonstrate the student's engagement with the course material, and, as such, are a key component of his/her grade. The extent of each assignment submission should be at least 300 words and not exceed 400 words.

Responses to other students' postings (at least two) must be made for all Forum discussions and assignments. Submitted work that contributes to the discussion with substantive new ideas (beyond an "I agree" or an "I like" post) will be considered in your participation grade. Your shared thoughts, questions, and experiences provide an interesting discussion and an opportunity for growth of your management and your communication skills. Quality of participation is based on unique and significant content derived from good analytical, logical, and creative thinking. Each student is encouraged to present his/her views. A variety of views should and will be presented. Each student must be tolerant of these views and respect the views of others. The classroom is a forum conducive to learning and it should be the goal of each person to assure that this is achieved. It is part of the learning experience to collaborate, support each other, and fully explore and resolve

issues of differences.

Attendance Policy: Class attendance will be taken twice a week once on Tuesday at 11:55 pm and once on Thursday at 11:55 pm. Timely submission and discussion participation in the weekly forum will count towards your attendance for the class sessions. There are penalties for missing either session of the course and these penalties are considered “no fault” penalties. In other words, it doesn’t matter why you missed the class; the penalties apply regardless of the reasons for your absence. If you do not post your online assignments by the assigned date and time, you will be marked as “Absent” from that “class”.

You may miss one class. If you are absent from two classes, your final course grade will automatically be penalized (50% of a letter grade). If you miss three classes, your final course grade will automatically be penalized one full letter grade. If you miss four classes, your final course grade will be penalized two full letter grades and you should withdraw from the course.

Grading Policy and Methods of Assessment:

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| Attendance | 10% |
| Online case studies | 48% |
| Online participation | 12% |
| Paper presentation | 10% |
| Research paper | 20% |
| Total | 100% |

COURSE OBJECTIVES AND LEARNING OUTCOMES

Course Objectives:

By the completion of this course, each student will be able to:

- Understand the principles of quantitative analysis as they apply to the management of health care organizations,
- Analyze data for effective decision-making in a variety of health care settings,
- Apply analysis tools to determine the efficiency of health service systems,
- Utilize quantitative analytic techniques in developing and evaluating strategic plans, and
- Demonstrate critical thinking and communication skills.

Learning Outcomes:

By completion of this course, each student should know/demonstrate:

- An understanding of quantitative analysis principles as they apply to health care settings through the completion of exercises and quizzes,
- An ability to evaluate data in health care organizations through the completion class discussions and exercises,
- An understanding of the design and analysis of health care systems through participation in class discussions and completion of exercises,
- An understanding of the application of quantitative methods through the completion of the final paper, and

- Critical thinking and communication skills through the completion and presentation of the final paper.

PROJECTED COURSE SCHEDULE

Week One

Topic: Introduction

Foundation Competencies – Part 1

Learning Objectives:

- Acquire an understanding of all course details and requirements.
- Calculate and use descriptive statistics.
- Compare different types of data using statistical inference and hypothesis testing.
- Present data effectively and efficiently in visual form.

Reading Assignment: Textbook, Chapter 1 & 2

Online Case Study Forum – CS1: Explain how the use of quantitative methods can enhance organizational effectiveness and efficiency.

Your response must range from 300 to 400 words and posted online in the Discussion Forum Platform of the week. You also must post comments on at least 2 of other students' postings.

Online Activities/Discussions (DL format) – A1-DL

- Review course requirements.
- Watch posted presentation/s
- Submit answers: exercises 2-1 to 2-5

Week Two

Topic: Foundation Competencies – Part 2

Learning Objectives:

- Describe and evaluate general systems flow charts,
- Construct a general systems flow Chart,
- Understand the concept of the time value of money, and
- Compute the future or present value of money.

Reading Assignment: Textbook, Chapter 3 & 4

Online Case Study Forum – CS2: Explain the tools of compounding and discounting and how these skills enable a manager to evaluate a wide variety of situations.

Your response must range from 300 to 400 words and posted online in the Discussion Forum Platform of the week. You also

must post comments on at least 2 of your other students' postings.

Online Activities/Discussions (DL format) - A2-DL

- Watch posted presentation/s
- Submit answers: exercises 3-1 to 3-4 & 4-1 to 4-4

Week Three

Topic: Forecasting Competencies – Part 1

Learning Objectives:

- To describe the concept of forecasting as a managerial tool,
- To describe the difference between analytic and non-analytic forecasting,
- To understand the assumptions of analytic forecasting,
- To describe the limitations of forecasting,
- To examine the role of time intervals in forecasting models,
- To examine guidelines for length of future forecasts, and
- To understand forecasting based on average change, average percent change, and confidence intervals.

Reading Assignment: Textbook: Chapter 5-6.3

Online Case Study Forum – CS3: Explain the pros and cons of the three types of forecasting.

Your response must range from 300 to 400 words and posted online in the Discussion Forum Platform of the week. You also must post comments on at least 2 of your other students' postings.

Online Activities/Discussions (DL Format) – A3-DL

- Watch posted presentation/s
- Submit answers: exercises 5-1 to 5-6

Week Four

Topic: Forecasting Competencies – Part 2

Learning Objectives:

- To understand weighted forecasting models by using moving averages.
- To understand weighted forecasting models by using exponential smoothing.
- To be able to select between forecasting models based upon the calculated mean absolute deviation (MAD)
- To examine the foundations and components of the regression model.
- To test the validity of the underlying assumption of linearity in the data.
- To examine the use of time as an independent variable in regression forecasting.

- To use regression residuals to develop a best forecast based upon mean absolute deviation (MAD)
- To construct confidence intervals around regression forecasting estimates

Reading Assignment: Chapter 6&7

Online Case Study Forum – CS4: Explain the pros and cons of the three types of forecasting.

Your response must range from 300 to 400 words and posted online in the Discussion Forum Platform of the week. You also must post comments on at least 2 of your other students' postings.

Online Activities/Discussions (DL Format) – A4-DL

- Watch posted presentation/s
- Submit answers: exercises 6-1 to 6-6

Week Five

Topic: Project Analysis: Decision Analysis

Learning Objectives:

- To be able to construct and use decision trees as a method to examine decision alternatives
- To be able to calculate expected payoff and select a decision based upon maximum payoff using specific examples

Reading Assignment: Textbook: Chapter 10

Online Case Study Forum – DF5: Explain the three core component parts of decision analysis.

Your response must range from 300 to 400 words and posted online in the Discussion Forum Platform of the week. You also must post comments on at least 2 of your other students' postings.

Online Activities/Discussions (DL Format) – A5-DL

- Watch posted presentation/s
- Submit answers: exercises 10-1 to 10-3

Week Six

Topic: Project Analysis: Economic Analysis

Learning Objectives:

- To understand the balance/conflict that may be involved in making project decisions,
- To understand what is meant by economic analysis and differentiate among the different types of economic analyses,
- To understand the basic elements of a cost-effectiveness (CE) analysis, and

- To be able to calculate the CE of a specific project or intervention.

Reading Assignment: Textbook: Chapter 11

Online Case study Forum – DF6: Explain the three evaluation techniques for projects.

Your response must range from 300 to 400 words and posted online in the Discussion Forum Platform of the week. You also must post comments on at least 2 of your other students' postings.

Online Activities/Discussions (DL Format) – A6-DL

- Watch posted presentation/s
- Submit answers: exercises 10-1 to 10-5

Week Seven

Topic: Project Analysis: Quality Analysis

Learning Objectives:

- To describe how statistical process control can be used to monitor and improve the services provided by healthcare organizations,
- To describe the use of total quality management and continuous quality improvement methods and models to enhance system performance, and
- To analyze service systems using run and control charts.

Reading Assignment: Textbook: Chapter 14

Review final paper requirement (*refer to syllabus - week 8 section*)

Online Case Study Forum – DF7: Describe briefly a scholarly article of your choice, which you will use for your final paper (for paper requirement refer to Week 8)

Your response must range from 150 to 250 words and posted online in the Discussion Forum Platform of the week. You also must post comments on at least 2 of your other students' postings.

Online Activities/Discussions (DL Format) – A7-DL

- Watch posted presentation/s
- Submit answers: exercises 14-1 to 14-3

Week Eight

Topic: Final paper submission and presentation

Learning Objective:

- Demonstrate the ability to apply quantitative methods to decision-making in health care management.
- Demonstrate advanced critical thinking and communication skills.

Online Final Paper Submission:

Find a scholarly article that presents the results of a research study related to the management of health care organizations. Your paper should be a three (3) to four (4) page doubled-spaced structured analysis and contain proper APA citations and references. Use the questions below to guide your paper:

What was the background of the study?

What was the research question?

Why was the research conducted?

What research methods were used?

What were the results of the study?

Do you believe that the methods used were appropriate for this study?

What is the value of these results to the health care management field?