

Course Syllabus

HSAD 5133 Health System Engineering-Quant Method

Department of Health and Public Administration
College of Health Sciences and Human Services
Midwestern State University

Course Information

Course Number: HSAD 5133
Course Title: Health Sys Eng-Quant Method

Faculty: Rachel Blackwood, MBA, PMP, Adjunct Faculty

- Email (always try this first): **Use D2L email for this class.** I usually respond within 24 hours except perhaps if this falls on weekends and/or holidays.
- Because there have been issues with D2L email in the past, please also email my private email at Rachel_blackwood@yahoo.com
- Phone: 952-484-4793

Course Objectives

This course introduces principles and methods employed in health evaluation within health organizations. The primary program objectives pursued in this course are as follows:

- Understanding of the application of statistical, industrial engineering, operations research, and scientific research techniques in planning, managing and evaluating health care programs and organizations.
- Ability to apply selected quantitative techniques in addressing problems or opportunities relating to planning, managing and evaluating health services programs and health delivery organizations.
- Ability to plan and conduct organizational evaluations and management audits and ability to design and implement integrated management and planning systems, and organize and perform reengineering in healthcare organizations.
- Ability to evaluate alternative approaches to corporate planning, ability to evaluate alternative planning methods/techniques, and ability to apply selected planning methodologies in health care organizations.

To successfully complete this course, the student should be able to:

1. Demonstrate how managerial problem solving is enhanced with quantitative analysis.
2. Develop analytical skills in decision making and problem solving by using quantitative and non-quantitative analytical tools and rational models.
3. Demonstrate, through the completion of case studies and problem assignments, how decisions are enhanced with linear programming.
4. Utilize the quantitative tools that will improve health care efficiency.

Required Textbooks and Materials

Text: Ozcan, Yasar A. Analytics and Decision Support in Health Care Operations Management. 3rd Ed. Jossey-Bass Public Health. ISBN-13: 978-1119219811

International Students – Class meetings for HSAD 5133 X 11 TBD – Schedule will be posted in D2L.

Grading

Final Grades will reflect student performance in these areas:

Modules 1-8 Discussions (30 pts each)	240
Assignments (80 pts each)	640
Final Exam	<u>120</u>
	1000

For International Students, there are additional points for class attendance for a total of 1040 points (40 points for each class attended).

Final letter grades will be determined according to the following table where the top row is the course grade (percentage) and the bottom row is the corresponding letter grade.

90-100	80-89	70-79	60-69	<60
A	B	C	D	F

Participation:

Traditionally there are three levels of participation: active, moderately active and passive. An active participant is prepared and contributes to the general learning of the class, asks pertinent questions, actively listens, asks relevant questions when confused by course content, and shares relevant insights. These learners also respond to at least two fellow students and provide valuable insight and link their ideas with at least one peer-reviewed reference in their responses. I hope you all will strive to be active learners.

Assignments:

There will be 8 assignments throughout the semester. All assignments should be completed in Excel or Word depending on the assignment guidelines. You must show your work to earn full points. Each assignment is worth 80 points in total. **Assignments will not be accepted late.** Requests to turn homework in late must be submitted at least three days prior to the due date and will only be given in extreme circumstances. Each exercise and calculation should be completed in a separate tab within Excel. Please name each tab the appropriate exercise number. Also, create an overview tab that contains only the answers to all of the exercises. Please see example homework posted in Module 1.

Exams:

Final exam will consist of a case study and require calculations learned earlier in the class. Details on the final will be given to you later in the semester.

Discussion:

Each module will have one discussion that may consist of questions or a case study. Whenever possible the professor will try to design cases and questions that will help you explore issues that will help you in your future career. Each module will contain a variety of questions that will be explored during the discussions.

Student responses should be provided in the text window within the discussion area and NOT as an attachment. Students are encouraged to type their responses in Word and copy/paste into the discussion response window.

Your responses must be carefully thought out, and draw upon the readings or other appropriate outside sources. For each discussion, students should post his/her discussion and also respond to others' posts (at least two classmates'). Initial discussion posts should include at least two peer-reviewed sources in addition to your text. Initial discussion posts should be between 250-300 words and responses should be at least 75-150 words. Peer responses should include at least one peer-reviewed source. The points earned depend on your context, the quote of the literature, your response to others, etc. Responses to others' posts should be thoughtful and add to the discussion – a response of "I agree" will not earn any points. Online discussions are meant to replace in-class discussions.

Academic Honesty

I assume that the written work you turn in reflects your own ideas and your own words, unless you specifically attribute them to another source. Very limited amount of quotation for written assignments is acceptable. When paraphrasing, appropriate acknowledgement of the ideas, works, writings, or opinions that you borrow must be stated. Academic dishonesty is not acceptable and is a breach of the student code of ethics.

Dishonesty includes, but not limited to:

- 1) Plagiarism
- 2) Submitting work that was not prepared by you (fraud)
- 3) Helping another student with their work when expressly prohibited (cheating).

TurnItIn: MSU takes plagiarism very seriously and the university has provided a multitude of resources to help students avoid intentional and non-intentional plagiarism. TurnItIn is an excellent plagiarism checker and runs a report each time you submit an assignment. You have access to a version of the report through the Assignments area and this report provides a similarity index. I encourage you to review your TurnItIn report as it highlights areas that need better paraphrasing. Many times, it will also highlight resources and headers, so please ignore these as they are not of concern. I review the TurnItIn report for EVERY assignment and if I see concerns, I will contact you and we will discuss the situation. It is good practice to always paraphrase, cite and reference throughout most of your papers. While there are times when students like to provide direct quotes, please note that the majority of your paper needs to be written in your own words (paraphrased) with appropriate citation. Please let me know if you have questions.

Class Start Date: 8/22/2022

Module	Task/Assessment	Start Date	Due Date
Module 1 - Introduction to Analytics, Predictive Analytics, Decision-Making	Getting to Know You Discussion	8/22/2022	8/27/2022
	Discussion 1: Initial Discussion Posting		
	Read: Chapter 1 Introduction to Analytics and Decision Support	8/22/2022	9/3/2022
	Read: Chapter 2 Predictive Analytics		
	Read: Chapter 3 Decision-Making in Healthcare		
	Discussion 1: Peer Responses		
	Homework 1: Chapter 1, 2, 3 Exercises		
Module 2 - Facility Location and Facility Layout	Discussion 2: Initial Discussion Posting	9/4/2022	9/10/2022
	Read: Chapter 4 Facility Location	9/4/2022	9/17/2022
	Read: Chapter 5 Facility Layout		
	Discussion 2: Peer Responses		
	Homework 2: Chapter 4 and 5 Exercises		
Module 3 - Flow Processes and Improvement, and Staffing	Discussion 3: Initial Discussion Posting	9/18/2022	9/24/2022
	Read: Chapter 6 Flow Processes and Improvement	9/18/2022	10/1/2022
	Read: Chapter 7 Staffing		
	Discussion 3: Peer Responses		
	Homework 3: Chapter 6 and 7 Exercises		
Module 4 - Scheduling, Productivity, and Performance Benchmarking	Discussion 4: Initial Discussion Posting	10/2/2022	10/8/2022
	Read: Chapter 8 Scheduling	10/2/2022	10/15/2022
	Read: Chapter 9 Productivity and Performance Benchmarking		
	Discussion 4: Peer Responses		
	Homework 4: Chapters 8 and 9 Exercises		
Last Day to Withdraw with a "W"		10/24/2022	
Module 5 - Resource Allocation and Supply Chain and Inventory Mgmt	Discussion 5: Initial Discussion Posting	10/16/2022	10/22/2022
	Read: Chapter 10 Resource Allocation	10/16/2022	10/29/2022
	Read: Chapter 11 Supply Chain and Inventory Management		
	Discussion 5: Peer Responses		
	Homework 5: Chapters 10 and 11 Exercises		
Module 6 - Quality Control and	Discussion 6: Initial Discussion Posting	10/30/2022	11/5/2022
	Read: Chapter 12 Quality Control and Improvement	10/30/2022	11/12/2022
	Read: Chapter 13 Project Management		

Improvement and Project Mgmt	Discussion 6: Peer Responses		
	Homework 6: Chapters 12 and 13 Exercises		
Module 7 - Queuing Models and Capacity Planning	Discussion 7: Initial Discussion Posting	11/13/2022	11/19/2022
	Read: Chapter 14 Queuing Models and Capacity Planning	11/13/2022	11/22/2022
	Read: Chapter 15 Simulation		
	Discussion 7: Peer Responses		
Homework 7: Chapters 14 and 15 Exercises			
	Thanksgiving Break	11/22/2022 through 11/27/2022	
Module 8 - Course Reflection	Discussion 8: Initial Discussion Posting (viewable starting 11/23)	11/29/2022	12/3/2022
	Homework 8: Reflection Paper (viewable starting 11/23)	11/30/2022	12/3/2022
	Discussion 8: Peer Responses		
	Comprehensive Final Exam	12/2/2022	