

Trinity University
Department of Health Care Administration
Fall Semester 2009

HCAD- 5221: Operations Management in Health Care Organizations

Instructor: Dr. Edward J. Schumacher

Contact Information

Office: Chapman 402
 Office Phone: 210.999.8137
 Office Fax: 210.999.8108

Office Hours: M-Th. 2-5
 Email: eschumac@trinity.edu
 Web Page: www.trinity.edu/eschumac

Course Description

This course covers topics in the basic applications of operations research techniques to health care planning, control, and decision making including deterministic and random models, mathematical programming, queuing, simulation, forecasting and quality improvement. Emphasis is placed on model formulation and computer solution of decision models.

HCAD Competency Model

Competencies Covered in 5221	Level	How addressed	How assessed
Problem-Solving & Decision Making Ability to integrate quantitative and management skills to come to an informed decision	1	Lecture/Discussion	Problem Set
Quality Improvement / Performance Improvement. Be able to understand and apply principles and techniques for performance monitoring and improvement	1	Lecture/Discussion Departmental Assessment Project	Problem Set Departmental Assessment paper and presentation
Quantitative Skills Business decision making and performance improvement	1,2	Lecture/discussion Departmental Project	Problem Sets Departmental Assessment paper and presentation
Multivariate Analysis	2	Lecture/Discussion	Problem Sets
Planning and Managing Projects Understand the use of project management for administrative and clinical operations Be able to evaluate projects with PERT/CPM techniques	1	Lecture/Discussion	Problem Set

Level: 1 = Knowledge 2 = Application 3 = Integration

Course Objectives

- Understand the role of statistics in quality improvement using statistical process control techniques
- To be able to design and construct a control chart and utilize it in the decision making process
- To be able to estimate and interpret a forecasting model
- Understand the basic models of queuing theory, linear programming, and productivity measurement

Course Requirements

Your course grade will be determined from problem sets, an independent project, and a final exam. The following weights will be used:

Problem Sets	40	Percent
Departmental Assessment Paper	35	Percent
Departmental Assessment Presentation	15	Percent
Class Participation	10	Percent

A ten-point scale will be used to determine your final letter grade.

Problem Sets

Homeworks will be due on Monday after they are assigned (they should be in my inbox by Tuesday morning). These may be done with your classmates. In fact, I encourage you to form a study group to do so. Each student, however, must turn in his or her own assignment including a written explanation of the derivation and interpretation of the answers.

If you are unable to take an examination or turn in a scheduled assignment, it is your responsibility to contact me prior to the scheduled completion date. Late work will be penalized 10 percentage points per day.

Departmental Assessment Project

This project will be in conjunction with HCAD 5383 Health Care Institutional Management. The goal of the project is to develop an understanding of how departments function, how they measure themselves and how to talk about key medical procedures and technology. You will work in groups of 2-3 for this paper. Group members will be randomly selected. You will develop a report, which provides an in-depth analysis of a specific clinical hospital department. The departments include: Cardiac Cath Lab, Emergency Room, Intensive Care Unit, Radiology, Pharmacy, Laboratory, Inpatient surgery, Outpatient surgery, Labor/Delivery.

In your research you should visit at least three organizations of various types (for profit, not-for profit, public, urban, rural, systems, etc.) These visits should include interviews with the department heads as well as clinicians (physicians, nurses, pharmacists, etc.) within the department. At the same time, you should investigate the literature in academic journals, trade journals, and national periodicals for information on your department. These two types of investigation should complement each other. Your goal for the project is to be the class expert on your department. We do not want you to focus on the specifics of a particular hospital, but your expertise should apply generally to all hospitals.

There are three deliverables for the project:

I. Health Care Institutional Management Paper:

The paper should cover the following aspects:

- Current issues/hot topics
- Services provided
- Management and organization (organizational chart, reporting, structure, etc...)
- Staffing (training, education, salaries, ...)
- Regulations/compliance (JCAHO, other, ...)
- Financial management
- Patient care committees (if applicable)
- Top 5 commonly used administrative/medical terms (with their explanations)

II. Operations Management Paper:

The paper should cover the following aspects:

- Technological overview – discuss the history of the equipment used, focusing on any current hot topics and costs.
- Process maps – flowchart the main process(es) of care. For example, show how patients flow through the process and who they come into contact with.
- Overview of key metrics – what are the main measures that management uses to track performance (productivity, financial, human resources, etc.)
- Define the average and/or best practice for the entire industry, or give a range of expected values for the key performance indicators.

For both papers the page limit is 12 double-spaced pages, Font 12, exclusive of any appendices and references. Both papers will have an introduction and conclusion and there may be some overlap in these sections, but there should be two distinct papers.

Both papers are due on Monday November 23rd.

III. Presentation

Each group will present to the class. These will be a joint presentation of both the quantitative and institutional management components of the project. The presentation should provide the audience with a basic understanding of the workings of your department on both the management and quantitative side. You will receive a separate presentation grade for each class even though it is a single presentation. While your presentation should touch on the material on both sides, you are free to focus on what you think is the most pertinent information for your classmates to know. The presentation should include the use of appropriate visual aids. All members of the group should present. The group doing the presentation will have 15 minutes to present its paper, followed by 10 minutes of questions and discussion. Each group is expected to prepare handouts to be distributed in class to facilitate note taking for other students. You will be penalized for exceeding the time limit and are urged to practice the presentation to be sure that you stay within the time limit.

Groups will be randomly assigned, but each group is free to choose their department on a first come first serve basis. To choose your department, send Dr. Schumacher an email (eschumac@trinity.edu) with your choice. The class website for HCAD 5221 (<http://www.trinity.edu/eschumac/HCAD5320/HCAD%205320.htm>) will keep a running list of what departments are available.

Attendance

You are expected to come to every class. If you need to miss a class, you should contact me *prior* to the class to make alternative arrangements.

My office hours are as indicated above. However, I operate on an “open-door” policy and encourage you to stop by anytime during the day.

Course Materials

Text:

Ozcan, Yasar A., *Quantitative Methods in Health Care Management, Techniques and Applications*, 2nd edition, Jossey-Bass, San Francisco, CA, 2009.

McLaughlin, Daniel B., and Juliem. Hay. *Healthcare Operations Management*. Health Administration Press, Chicago, IL/ AUPHA Press Washington, DC. 2008.

Martin, Paula, and Karen G. Tate. *The Project Management Memory Jogger*, GOAL/QPC, Salem NH. 1997.

Case Studies:

Franchetti, Mathew, and Kyle Bedal. *Perfect Match: Team Applies Six Sigma to Reduce Time it Takes to Qualify Patients for Kidney Transplants*. American Society for Quality, ASQ.org, August 2009.

Jacobsen, Janet. *Emergency Department Prescribes Lean for Process Improvement*, American Society for Quality, ASQ.org, May 2008.

Tentative Schedule

The class schedule given below indicates the dates and materials to be covered. The reading material should be prepared before the class meets. Minor adjustments to the class schedule may be necessary.

Day	Reading Assignment	Topic
October 22 nd	McLaughlin and Hays Ch 8, 9 Ozcan Ch 12	Statistical Process Control
October 29 th	Case Studies	Lean Six Sigma
November 5 th	Ozcan Ch 2	Forecasting
November 12 ^h	Ozcan Ch 7-9	Staffing and Productivity
November 19 th		Departmental Assessment Presentations
November 26 th		Thanksgiving week – No class
December 3 rd	McLaughlin and Hays Ch 5 Ozcan Ch 13 Ozcan Ch 14	Queuing Theory Project Management

Academic Integrity:

Trinity University's policy on academic integrity and the penalties for violations will be followed with no exception. Please refer to the Student Handbook.