Course Syllabus

COURSE TITLE: QUANTITATIVE DECISION MAKING FOR HEALTH ADMINISTRATION

COURSE NUMBER: HLAD 806

INSTRUCTOR: Ralph Bell, Ph.D.

CREDIT HOURS: 3.0

TRIMESTER OFFERED: AY 2000-2001

Course Description:

This course emphasizes the conceptual frameworks and the practical applications of various decision making techniques relevant to health administration. The focus of the course is on developing decision making models and using available software which enable the administrator to make the best decision to assist in achieving organizational goals and objectives.

Prerequisites:

Statistics, HLAD 705, and MIS 725

Course Rationale:

Most of a health administrator's work falls into two broad categories:

(1) Decision making which involves choosing among alternative courses of action to help maximize organizational goals and objectives;

and

(2) Control which involves ensuring that organizational goals and objectives are being met and will continue to be met.
To successfully engage in these two types of activities, administrators must have the ability to formulate the problem, identify and develop appropriate assumptions relevant to the question at hand, recognize and define constraints on the decision making process, and develop the appropriate model to identify the best course of action. HLAD 806 provides students with the skills and knowledge necessary to participate in decision making and control activities required of health administrators.

**Intended Audience:**

Second year health administration graduate students

**Competencies:**

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

1. Formulate administrative problems quantitatively.
2. Understand and use a sound decision making framework.
3. Apply decision making techniques to:
   - Planning projects
   - Make choice decisions based on "make/buy" models
   - Develop queuing models
4. Build and interpret models analyzing simple and complex stochastic processes.
5. Use computer software for problem solving.
6. Understand and apply ethics in making health care related decisions.

**Approach to the Course:**

This course will combine a lecture/discussion format with computer applications. Students will learn both the proper techniques and the appropriate software to solve a series of assigned problems.

**Requirements:**

Course grades will be determined by three examinations involving problem solving using the computer. Each exam will constitute 1/3 of the final grade.

Incompletes will not be granted for this course without advance approval of a written request specifying legitimate reasons for the extension.
Required Texts:


Disability Statement:

Students who have a disability or special needs and require accommodation in order to have equal access to the classroom, must register with the designated staff member in the Division of Student Development. Please go to Room B1201 or call (708) 534-4090 and ask for the Coordinator of Disability Services. Students will be required to provide documentation of any disability when an accommodation is requested.

Topic 1: Introduction

Instructional Objectives:

The following topics will be discussed:

1. Defining objectives within an organizational context.
2. Where to begin.
3. Overview of the decision making framework.
4. The health administrator's role in decision making.

Readings:

Austin and Boxerman - Introduction and Chapter 1


**Topic 2: Make/Buy Decisions and Break-Eye Analysis**

**Instructional Objectives:**

The following topics will be discussed:

1. Scenarios with linear costs.
2. "Stepped" cost scenarios.
3. Break-even analyses.
4. Microsoft Excel

**Readings:**

Austin and Boxerman - Chapter 2


**Topic 3: Tools for Project Planning and Control**

**Instructional Objectives:**

The following topics will be discussed:

1. Project scheduling with Harvard Project Manager.
2. PERT networking
3. Gantt Charts

**Readings:**

Austin and Boxerman - Chapter 8


**Topic 4: Linear Programming**

**Instructional Objectives:**

The following topics will be discussed:

1. Simple deterministic analysis.
2. Complex deterministic analysis
3. Linear optimizing using Microsoft Excel.
5. Complex stochastic processes.

**Readings:**

Austin and Boxerman - Chapter 5


**Topic 5: Queuing Theory and Applications**

**Instructional Objectives:**

The following topics will be discussed:

1. The fundamentals of queuing theory, including:
   - Arrival processes
   - Service rates
   - Single server/multi-server models
   - Cost estimation
   - System statistics
   - System performance measures

2. Analyzing queuing models with Microsoft Excel

**Readings:**

Austin and Boxerman - Chapter 7


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*If Time Permits*

**Topic 6: Forecasting**

**Instructional Objectives:**

The following topics will be discussed:

1. Forecasting the demand for health services
2. Long-term demand
3. Intermediate demand
4. Short-term demand
5. Forecasting with SPSS-PC
Readings:

