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Textbook

Course Objectives
The healthcare system is an extremely complex structure with humans, facilities, materials, processes, regulations, and information. In this course, we will be studying various decision technology/techniques/models for supporting managerial decision-making in the context of healthcare business processes and operations. The objectives of this course are to:

- Understand the basics of business process flows and be able to apply to healthcare operations.
- Understand how variability can impact healthcare processes.
- Apply mathematically modeling and quantitative analysis to facilitate decision-making in healthcare operations.
- Recognize the critical role of healthcare data in decision-making.

Grading
Group:
- In-class Group Exercises/Quizzes 10%
- Group Project 20%

Individual:
- Case Analysis Assignments 25%
- Exam 1, 2, and 3 45%

Total: 100%

The final course grade will be based on the scale below.

- 90% - 100% A
- 80% - 89% B
- 70% - 79% C
- 60% - 69% D
- below 60% F
Class Policy
1. Attendance is crucial for the success of this class. You are expected to attend class, ask good questions, make valuable observations, and answer questions effectively on an ongoing basis.
2. No late assignments/reports will be accepted. Each assignment is due on or before the date specified. Individual assignment is expected to be done on your own. Thus, both the person who copies and the person who lets other copy his/her work will not get any credit for the assignment.
3. I reserve the right to retest (or assign additional work to) the whole class or any individual in the class if I believe an exam or homework has been compromised. Violations of the University’s academic integrity code include, but are not limited to: possession of, or use of unauthorized materials during exams; or providing information to any student. Violations may result in academic penalties. You can refer to the UNO Judicial Code for Academic Integrity for further information (http://www.uno.edu/%7Estlf/Policy%20Manual/student_policy_manual_frames.htm).
4. Everyone in the group should take initiative in participating in the group project. “The group members did not ask me to do anything and so I did nothing” is not a legitimate reason for not participating/contributing in the group project. If you have any problems with your group or group member(s), please let me know ASAP.
5. Topic/chapter numbers are listed in this syllabus. Please prepare the readings before coming to class. That will benefit both you and other members of the class.
6. If you do not understand any of the class material, seek help immediately.

ABC for Success
1. Always come to class, keep up with the class material, and do your homework/assignments.
2. Be a good time manager for studying and taking exams.
3. Communicate with your instructor(s).

Exam 1, 2, and 3 (45%)
All exams are close-book and close-notes exams with problem-solving types of questions (see Sample Exam handouts for example). Each exam is not comprehensive and students can bring an info sheet no bigger than 8.5” by 11”. The exam questions are all problem-solving which requires some computations and some interpretations.

In-class Group Exercises/Quizzes (10%)
There will be a number of exercises and problems from the Sample Exams that require the whole group to work on. Each group will receive a group grade and each individual’s grade will be adjusted by the average peer evaluation.

Group Project (20%)
The project involves identifying and improving a process and/or a business aspect of a health care organization. Each group is required to analyze the efficiency and effectiveness of the process, identify problems, and suggest ways for improvement. Be as specific as possible. In some cases, flowcharts of the new improved process may need to be drawn.

Deliverables:
The report must be typed in 12-point font and double-spaced. The report should not exceed 12 pages, not including the exhibits and appendices. The report is expected to be complete and concise. To improve the
readability of the report, you should use section headings, such as, Company History, etc. The following provides a sample of what the report may look like.

Company Background (History and Description of Products/Services) (1-2 pages)
Description of Process and Problems (3-4 pages)
Critique/analysis (with justifications) of Process/Problems (3-4 pages)
Suggestions for Improvement (2-3 pages)

Individual Score = Group Score * Adjusting Factor (average peer evaluation)

**Peer Evaluation Form (Group Project and In-class Exercises/Quizzes)**

<table>
<thead>
<tr>
<th>Name of peer</th>
<th>Group Project Contribution* (0-100%)</th>
<th>In-class exercises/quizzes Contribution* (0-100%)</th>
<th>Comment</th>
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- If the contribution is below 80%, please provide an explanation in the Comment Column.
- Peer evaluation is due on or before the final exam via email.

**Individual Case Analysis Assignment (25%)**:  
Before the due date for a case, students are expected to:

1. Read the case.
2. Create a report to answer all of the case questions as thoroughly as possible.

During class, students are expected to participate in the discussion. 30% of the case grade is based on your participation in the discussion in class. 70% of the case grade is based on the report.

**Laying Out Arnold Palmer Hospital’s New Facility Case**

1. What are some of the layout-related problems/issues that Arnold Palmer Hospital is experiencing before the hospital decided to build new facility? Identify the many variables/factors that a hospital needs to consider in layout design. Briefly discuss why the variable/factor is important.
2. What are the advantages of the circular pod design over the traditional linear hallway layout found in most hospitals?
3. During a period of random observations, nurse Thomas Smith’s day includes 6 trips from the nursing station to each of the 12 patient rooms (back and forth), 20 trips to the medical supply room, 5 trips to the break room, and 12 trips to the linen supply room. With the old layout, what is the total distance in miles (1 miles = 5280 feet) feet Nurse Thomas Smith traveled in a typical day? Show your work.

4. With the pod design, how many miles does he walk during his shift? What are the differences in the travel distance between the two layout designs?

5. Describe why servicescapes (physical surroundings) is so important at Arnold Palmer Hospital. Give examples from your organization of using servicescapes in layout design to improve services.

Process Analysis at Arnold Palmer Hospital Case
1. As Diane's new assistant, you need to flowchart this process. Turn in a hardcopy (can be hand-written) when you turn in your report. Explain how the process might be improved once you have completed the chart. That is, briefly explain three things/areas you would examine in order to improve the process.

2. If all mothers were required to be electronically/manually preregistered, how would the flowchart change? Redraw the chart to show your changes.

The Culture of Quality at Arnold Palmer Hospital Case
1. What are the specific quality dimensions in hospitals/clinics/healthcare organizations? Briefly describe/discuss.

2. Why is it important for Arnold Palmer Hospital to get a patient’s assessment of health care quality? Does the patient have the expertise to judge the health care she receives? Critique (pros and cons) the assessment method used in the case.

3. How would you build a culture of quality in an organization, such as Arnold Palmer Hospital? Be as specific as possible.

4. Briefly discuss/describe the techniques your own organization use for quality and continuous improvement. Specifically, what assessment tools do you use to get feedback from the customers/patients? How these information can be incorporated into the improvement plan.

Capacity Planning at Arnold Palmer Hospital Case
1. How to measure capacity in a hospital? What are some of the capacity related problems and/or opportunities that Arnold Palmer is facing?

2. Given the three capacity expansion strategies (leading, lag, and straddle), what approach is being taken by Arnold Palmer toward matching capacity to demand? Critique (pros and cons) the approach used.

3. What kind of major changes could take place in Arnold Palmer’s demand forecast that would leave the hospital with an underutilized facility? What are the risks connected with this capacity decision?

4. Use regression analysis to forecast the point at which Swanson needs to "build out" the top two floors of the new building, namely, when demand will exceed 16,000 births. What if the growth rate of birth is 10% higher than the trend projection? What if the growth rate of birth is 15% higher than the trend projection?
## Tentative Course Outline and Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Topics</th>
<th>Individual Case Report Due</th>
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</thead>
<tbody>
<tr>
<td>9/12 (Sat.)</td>
<td>Introduction, Performance Improvement, Process Improvement, Patient Flow, Facility Layout, and Decision Making Tools (Ch. 1, 2, 6, 11)</td>
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<tr>
<td>9/13 (Sun.)</td>
<td>Decision Making Tools - Tools (Ch 6)</td>
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</tr>
<tr>
<td>10/3 (Sat.)</td>
<td>Quality Improvement, Statistical Tools for Quality Improvement, Lean Enterprise (Ch 7, 8, 9)</td>
<td>(1) Laying Out Arnold Palmer Hospital's New Facility and (2) Process Analysis at Arnold Palmer Hospital</td>
</tr>
<tr>
<td>10/4 (Sun.)</td>
<td><strong>Exam 1</strong>&lt;br&gt;Scheduling and Capacity Management, Demand Forecasting, Supply Chain Management (Ch 12, 13)</td>
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<tr>
<td>10/31 (Sat.)</td>
<td>Demand Forecasting, Inventory Management, Supply Chain Management (Ch 13)</td>
<td>(1) The Culture of Quality at Arnold Palmer Hospital Case and (2) Capacity Planning at Arnold Palmer Hospital Case</td>
</tr>
<tr>
<td>11/1 (Sun.)</td>
<td><strong>Exam 2</strong> &lt;br&gt;Project Management (Ch 5)</td>
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<tr>
<td>November 21</td>
<td><strong>Exam 3</strong></td>
<td></td>
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</tbody>
</table>

**11/24**  
* * Group project due at EMBA office before noon  
* * Peer Evaluation Due via email