

**SCM 7A97 (25923): Business Process Management**  
**Fall 2015-Session 2**  
**C. T. Bauer College of Business, University of Houston;**  
**Department of Decision and Information Sciences**

**Instructor:** Dr. Powell Robinson, Professor of Supply Chain Management  
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**Class Time:** 6:00-9:00 pm, Monday in MH127  
**Office Hours:** Monday/Wednesday 3:00-4:30 pm, Monday after class, and by appointment

**Course Description**

This course introduces student to the concepts, issues and techniques used to plan, analyze and control business processes, including both production and service organizations. We will examine business process from a strategic and operational perspective. Organizations without the means to improve can rarely keep up with competition. Improvement requires a clear understanding of the business in which the firm competes, how to align its delivery processes such that the company excels on its core competencies, an ability to assess performance, and how to continually improve. The essence of process management is to answer the questions, “How is the process doing?” and “How can it do better?” In Module 1, students explore how firms seek to create and capture value for its stakeholders through their choice of business strategy and process choice. Module 2 utilizes case study to examine alternative process types in order to understand the techniques and analytics that are most useful for process analysis and design. Module 3 explores how firms design processes that meet customer expectations, insure that they continue to operate as designed, and techniques for process improvement.

**Course Objectives**

Upon completion of the course, the student will:

1. Understand business processes and how they should be designed to support competitive priorities in both manufacturing and service environments.
2. Be able to flow chart a business process in terms of inputs, outputs, activities, and related decisions
3. Recognize opportunities to significantly improve business performance by designing efficient and effective processes.
4. Benefit from further development of critical thinking skills to recognize, formulate, and analyze operational problems.
5. Be able to use analytical tools and methods to effectively model, measure and compare alternative business processes.
6. Possess the skills necessary to analytically determine a process’ capability to meet customer specifications and methods for insuring that the process continues to provide an acceptable product.
7. Understand the basics of Six Sigma and its role in continual process improvement.

**Required Materials:**

1. *Operations and Supply Chain Management The Core*, 3<sup>rd</sup> edition, by F. Robert Jacobs and Richard B. Chase, McGraw-Hill Irwin, 2013, ISBN 978-0-07-352523-5.
2. Harvard Business School case studies: There will be a course page created on Harvard Business Online for you, where you can access the cases required for the course. You will register with Harvard Business Online to get access to the cases.
3. Lecture notes and handouts will be posted on blackboard throughout the semester.

## Performance Evaluation

Grade components:

- Course Exam 35%
- Case Analysis 25%
- Homework and quizzes 20%
- In class performance 20%

## Information about the Exams/Quizzes

1. **Exam Content:** The exam will cover all material from lectures, readings, cases and study problems. The exam will be closed book and closed notes. The instructor will provide all mathematical formulas and statistical tables required for the exam. Exam formats will be a balance of multiple-choice, short answer and problem. The student must bring a calculator (no cell phones) to exam.
2. **Homework and Quizzes:** Periodic homework and quizzes promote student learning. Some quizzes will be announced, while others may not be. Hence, the student should be prepared for a quiz over the assigned material for that day. Preparing notes on the discussion questions and working assigned problems provides a solid foundation for success on the quizzes.
3. **Case Analysis:** Each student will be assigned to a team of 3-4 students for case analysis and presentation in class. Each team will provide a case write up with a maximum length of 5 pages plus exhibit with 1.5 line spacing. More details about the case write up will be given in class.
4. **Make-Up Policy:** Exams/quizzes may not be missed at the convenience of the student. If an exam/quiz is missed due to an approved university absence, you must inform the instructor no later than 48 hours after the exam (before the exam if possible) to schedule a make-up. There will be no make-ups for missed exams/quizzes without a university-approved excuse. Except under unusual circumstances, Make-Up Exams/Quizzes will be held within 10 days of the original scheduled date.
5. **In Class Performance:** I view each class as a business meeting during which time we will discuss the assigned material and related topics. During these meetings, I look for evidence of your preparation and understanding of the class material. This can only be exhibited by your in class contributions. Of particular importance are those contributions that help advance the understanding of others. Class attendance alone does not represent participation. Each student is also expected to conduct himself/herself in a professional manner as expected of future business leaders. This includes respect for others, proper cell phone and computer etiquette, and timeliness among other factors.

## General Information

1. **Office Hours:** I will have regularly scheduled office hours. If for some reason you need to meet at an alternate time, please contact me so we can schedule a time. You are encouraged to contact the professor at the first sign of any problem or lack of understanding. Do not wait until it is too late!
2. **Study Groups:** I strongly encourage students to form study groups for the course. This will provide a resource for information should you miss class, a venue for discussing assignments, and a study group for exams.
3. **Blackboard:** Course materials, announcements, grades or changes to the course outline will be posted on blackboard. It is the student's responsibility to check Blackboard before every class period for important announcements, class notes, emails, grades and changes to the course schedule.
4. **Academic Dishonesty:** Scholastic Dishonesty is defined as (1) Acquiring or attempting to acquire information from others (e.g., observing the work of others during an exam), (2) Providing others with information on quizzes/exams; (3) Plagiarism, (4) Conspiracy to commit any of the above, (5) Fabrication of information. The University of Houston honor code statement applies to all students in this class. For more information, see Bauer Academic Honesty on

<http://www.bauer.uh.edu/current/academic-honesty.asp>. Any student caught providing or receiving assistance on an exam/quiz will immediately be given a grade of "F" for the course. ed) within the classrooms.

5. **Students with Disabilities:** Any student who feels s/he may need an accommodation based on the impact of a disability should contact the professor privately within the first two weeks of classes to discuss his/her specific needs. The student also needs to contact the Center for Students with Disabilities (contact information is below) within the first two weeks for coordinating accommodations.

Justin Dart Center for Students with Disabilities

University of Houston  
Houston, Texas 77204-3022  
Phone: (713) 743-5400  
TDD: (713) 749-1527

***HAVE A GREAT SEMESTER!***

# Course Schedule

## MODULE 1: OPERATIONS STRATEGY

### October 19: **Course Overview: Strategy, Process Types and Learning**

- Review: Chapter 1 & 2  
Understand strategic planning, order winners/qualifiers, competitive dimensions, how processes are organized and product life cycle implications for process design.
- Product and Process Matching  
Read: Old B&W
- Learning Curves:  
Read: Chapter 4A, pp. 118-125  
Work problems 1, 3, 5 & 8 on pp. 125-127.

## MODULE 2: PRODUCT AND PROCESS MATCHING AND DESIGN

### October 26: **Process Analysis: Flow Systems**

- Read: Process Flowcharting Lecture Notes
- Exercise: Kristen's Cookie Company (handout)
  1. Draw a flow chart of the operation.
  2. What is the throughput time to produce:
    - a. An order for one dozen cookies?
    - b. An order of two dozen cookies of the same type.
    - c. Two orders of one dozen cookies of different types?
  3. What is the bottleneck operation of the process?
- Case Analysis: "National Cranberry Coop" Harvard Business School 9-688-122  
Assignment: Be prepared to discuss the following questions in class. To simplify your analysis, assume 18,000 barrels arrive each day, 70 % are wet harvested and the berries arrive at a uniform rate over a 12-hour period.
  1. Prepare a process flowchart for the cooperative.
  2. Determine the maximum daily throughput capacity of the coop.
  3. What alternatives are available to meet the wet berry processing requirements?
  4. What evaluation criteria should be used in selecting an alternative?
  5. What time do trucks start waiting to unload because the storage bins are full?
  6. What recommendations do you have for the coop?

### November 2: **Process Analysis: Assembly Lines**

- Read: Ch. 6 and 6A, pp. 172-192  
Process Analysis Lecture notes.  
"Process Analysis, Curriculum Core", by Roy Shapiro (in HBS reading packet)
- Case: AIC Networks: Optimizing Product Assembly, HBS 4245  
Assignment: Be prepared to discuss the following questions in class.
  1. How efficient is netbook assembly at the Kaizhi plant?
    - a. What is the monthly output at the plant?

- b. What is the theoretical efficiency of the planned line, looking only at direct labor on the assembly line?
    - c. What is the actual efficiency of the assembly line?
2. How effective is the current operation?
  - a. What is the right criteria by which to evaluate it?
  - b. Is the operation designed appropriately to meet demand?
3. What is the financial impact of bringing the operation closer to “full potential” and achieving planned production levels?
  - a. What is the planned production level in terms of monthly output?
  - b. What is the financial impact of achieving the target cycle time?
  - c. How important is reducing direct labor as a means to improve financial performance? (assume each assembly line worker costs \$500 per month)

November 9: **Process Analysis: Batch Processes and Service Systems**

- Case: “Bayonne Packaging, Inc.” HBS #4420  
 Assignment: Be prepared to discuss the following questions in class.
  1. What is Bayonne’s industry, type of operation, and therefore its key competitive priorities? What are its main problems?
  2. What is the current capacity utilization in the work centers? (excluding finishing where capacity is variable)
  3. What is the capacity in pieces per day for the Die-cut work center, if it were running orders of 30,000 pieces in the following three cases: (a) none of the orders can be ganged; (b) pairs of orders can be ganged; (c) all of the orders can be ganged. Assume there are 15 available work hours per day and that the average setup takes 2.5 hours.
  4. Assume that 40 of the orders partialled in October each broke into a production run in the Royal/Queen work center, resulting in two setups for these orders instead of one.
    - a. What would capacity have been in October without these additional setups? And
    - b. What was capacity with these additional setups?
  5. What size of orders would you route to the Royal/Queen work center, and what to the Staude work center?
  6. What is the yield at each of the work centers sheet, Print, Die-cut, and Royal/Queen? What is the cumulative yield for an order which the sheeter starts with 40,000 sheets?
  7. How do you explain Bayonne’s performance problems?
  8. What should John Milliken recommend to Dave Rand?
  
- Case: “Delwarca Software Remote Support Unit,” HBS #5-913-541  
 Assignment: Be prepared to discuss the following questions.
  1. Draw the process flow diagrams for the unit before Rapid ID and after. What changed?
  2. What is capacity utilization of the Remote Support Unit, and how is this affecting waiting times?
  3. What would be the effect on capacity utilization of improving the productivity of the least productive two Associates and two Senior Associates to the current Rapid ID average?
  4. Why do you think system performance in terms of waiting time changes as it did? Why did customer behavior change as it did?
  5. If you were Jack McKinnon, what would you continue to do and what should you stop doing?

## MODULE 3: QUALITY MANAGEMENT AND LEAN SYSTEMS

### November 16: **Quality Management and Process Capability**

- Read: Chapter 10, pp. 304-317.
- Mini-Case: “Hank Kolb, Director of Quality Assurance”
  - What are the causes of the quality problems on the Greasex line? Display your answer on a fishbone diagram.
  - What general steps should Hank follow in setting up a continuous improvement program for the company? What problems will he have to overcome to make it work?
  - Are there any opportunities for Hank to use process capability or statistical process control on the Greasex line?
- Case: “Porcini’s Pronto: “Great Italian cuisine without the wait!” HBS #4277  
Assignment: Be prepared to discuss the following questions.
  1. How has Porcini’s maintained high product and service quality, and how does it plan to do so for its new Pronto concept?
  2. What does the proposed customer questionnaire system tell you about Porcini’s approach to quality? What are the system’s strengths and weaknesses? Can you suggest ways to supplement this tool?
  3. How well or poorly do the various elements of the Pronto concept – its menu choices, HR system, quality measures, etc. – support the goal of “Great Italian cuisine without the wait?”
  4. If you were a member of Porcini’s top management, which of the available growth options for Pronto would you choose? Why?
  5. What are the implications of your choice for profitability, ROI, product and service quality, and the quality image of the Porcini’s brand?
  6. Does Pronto have any sustainable competitive advantages? Why or why not?
- **Process Capability**
  - Read: Chapter 10, pp. 318-326  
Problems: 1, 2, 3, pp. 341.

### November 23: **Statistical Process Control and Lean Supply Chains**

- **Statistical Process Control**
  - Read: Chapter 10, pp. 327-334  
Problems: 4, 7, 8, 10, pp.342-343
- **Lean Supply Chains**
  - Read: Chapter 12, pp. 400-420.
  - Read: “Decoding the DNA of the Toyota Production System”, by Spear and Bowen, HBS article
- Case: “Toyota Motor Manufacturing, U.S.A., Inc.,” HBS, 5-693-019
  1. As Doug Friesen, what would you do to address the seat problem? Where would you focus your attention and solution efforts?

2. What options exist? What would you recommend? Why?
3. Where, if at all, does the current routine for handling defective seats deviate from the principles of the Toyota Production System?
4. What is the real problem racing Doug Friesen?

November 30: Process Improvement in the Information Age

- Case: “Esterline Technologies: Lean Manufacturing,” HBS # 5-906-417  
Assignment: Be prepared to discuss the following questions.
  1. What evidence does the case offer regarding Esterline’s success? What factors appear to have contributed to Esterline’s performance?
  2. What is the central question being addressed in this case? Why is it important to Bob Cremin? What issues are raised in the debate?
  3. How does lean manufacturing differ from more traditional approaches to production? What outcomes can a company expect from an effective-implemented lean manufacturing initiative?
  4. What is the role of an ERP system in a “traditionally run” manufacturing plant? Does it present conflicts for lean manufacturing? Why or why not?
  5. What about office lean? Is it a good idea? Why or why not?
  6. What advice do you have for Bob Cremin with respect to IT?
- Case: “Pharmacy Service Improvement at CVS”, HBS # 9-606-015  
Assignment: Be prepared to discuss the following questions.
  1. What changes do you recommend to CVS’s existing pharmacy fulfillment process? What IT changes, if any, are required to implement your changes?”
  2. How can you be sure that the new process you propose will be an improvement over the existing one? How can you be sure that it won’t make things worse?
  3. What groups, if any, are likely to have problems with your proposed solution? How will you deal with their objections?
  4. How will you ensure that there’s no backsliding—that there won’t still be wooden boxes in use six months from now? How can technology be used to prevent or inhibit backsliding?
  5. Does PSI represent a significant opportunity for CVS? Would improving customer service be of significant financial benefit to the company?
  6. What percent of pharmacy defectors from CVS in 2000 were light versus heavy users?

December 7 **Examination** (Covers all course material. Date may change to match MBA Schedules.

- Format: 1.75 hour duration with a balanced mix of multiple choice, short answer, and problems.
- Bring calculator to exam, equations/tables will be provided.