New Jersey Institute of Technology
College of Computing Sciences

IS 684-851: Business Process Innovation
Course Syllabus – Spring 2017

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Description

Enterprise business processes are the **end-to-end** collections of work activities that create and deliver value to customers. Examples of business processes are order fulfillment, new product development, and logistics.

This course introduces students to the key concepts and approaches of business process innovation (BPI) such as **incremental improvement**, **process automation**, and **process redesign**. BPI initiatives take place across three levels – the enterprise level, the process level, and the application infrastructure level. The focus of this course is on both understanding and designing business processes within these three levels of concern.

This course has both a theoretical and a practical component. Students will learn theoretical process models such as the Business Process Modeling Notation (BPMN) and use them to design process innovations to achieve efficiency, effectiveness, compliance, and agility objectives. They will also discuss the ways in which information technology can be used to manage, transform, and improve business processes. In the meanwhile, students will also gain hands-on experience with the software SAP, current market leader of ERP and BP systems. By going through several business processes using SAP for a global company, the students could reinforce their theoretical learning and link the models to actual business practices.

At the end of this course, the student should be able to:

Theory:
1. Describe and analyze **business work activities**
2. Map business processes using the **business process modeling notation** (BPMN)
3. Identify **process problems**
4. Apply **key business metrics** to analyze and track process performance
5. Explain how IT innovations can enable **agile business processes**
6. Specify **best practice** tactics for improving process efficiency and effectiveness
7. Analyze and critique proposed business process innovations

Practice:
1. Be able to navigate the **SAP** system with ease
2. Go through **Procurement**, **Fulfilment** and **Production** processes using SAP
3. Be able to link the theoretical discussions on business process to the hands-on SAP practice
4. Use the INNOV8 simulation game to understand how business process management could impact the business eco-system

Prerequisites

None, but prior modeling knowledge and a management or business course are suggested. Modeling knowledge could be gained in IS 663 or CS 673. Students with only a technical background should be prepared to invest additional time to understand management and organization concepts.

Required Texts:

Paul Harmon*, Business Process Change: A Guide for Business Managers and BPM and Six Sigma Professionals*, 2nd Edition, Morgan Kaufmann, 2007. ISBN-13: 9780080553672

Schedule of Readings

The weekly schedule of readings, topics, and assignments will be in Moodle. Below is a list of readings. More readings not on this list might be added to Moodle as we go through the semester.

1. Alter, Steven (2013) **"Work Systems Theory: Overview of Core Concepts, Extensions, and Challenges for the Future",** *Journal of the Association for Information Systems***,** Vol. 14. Issue 2. Pp. 72-121.
2. Alter, Steven (2002) **"Navigating the Collaboration Triangle***," CIO Insight*, Jan. 2002, pp. 21-27.
3. Alter, Steven (2002) "**The Work System Method for Understanding Information Systems and Information System Research,**" *Communications of the Association for Information Systems*, 9(6), pp. 90-104, Sept. 2002.
4. Carr, Nicholas, (2003) **"IT Doesn't Matter"** *Harvard Business Review*, May.
5. Davenport, Thomas H. and Donna Stoddard, **"Reengineering: Business Change of Mythic Proportions?"** *MIS Quarterly* (18:2), June 1994 pp. 121-127.
6. Denning, Peter J., "**Accomplishment**", *Communications of the ACM* (46:7), July 2003, pp. 19-23.
7. Denning, Peter J., and Peter Yaholkovsky, **Getting to "We**", *Communications of the ACM* (51:4), April 2008, pp. 19-24.
8. Dietz, Jan L. G., "**The Deep Structure of Business Processes"**, *Communications of the ACM* (49:5), May 2006, pp. 58-64.
9. Grant, Delvin, **"A Wider View of Business Process Reengineering**", *Communications of the ACM* (45:2), February 2002, pp. 85-90.
10. Goldkuhl, Goran, "**Action and Media in Interorganizational Interaction"**, *Communications of the ACM* (49:5), May 2006, pp. 53-57.
11. Hammer, Michael**, Reengineering Work: Don't Automate, Obliterate**, *Harvard Business Review*, July-August 1990, pp. 104-112.
12. Hammer, Michael, **"The Process Audit**", *Harvard Business Review*, April 2007. Pp. 111- 123.
13. Houghton, Robert, Omar A. El Sawy, Paul Gray, Craig Donegan and Ashish Joshi, **Vigilant Information Systems for Managing Enterprises in Dynamic Supply Chains: Real-time Dashboards at Western Digital**, *MIS Quarterly Executive* (3:1), March 2004, pp. 19-35.
14. Owen, Martin, and Jog Raj, **BPMN and Business Process Management**, Popkin Software White Paper, 2003.

15. Repenning, Nelson P., and John D. Sterman, **Nobody Ever Gets Credit for Fixing Problems that Never Happened: Creating and Sustaining Process Improvemen**t, *California Management Review* (43:4), Summer 2001, pp. 64-88.
16. Teo, Thompson S. H., C. Ranganathan, Shirish C. Srivastava, and James W. K. Loo, **Fostering IT-Enabled Business Innovation at YCH Group**, *MIS Quarterly Executive* (6:4), December 2007, pp. 211-223.
17. White 2004, Stephen A**., Introduction to BPMN**, IBM White Paper.
18. White, Stephen A., **Using BPMN to Model a BPEL Process**, IBM White Paper, 2005.
19. White, Stephen A., **Introduction to BPMN – A Tutorial,** IBM Software Group, October 16, 2006.

Assignments (Individual and Team)

There will be several individual and team assignments over the semester. Details on each assignment will be posted on Moodle.

Each week, each team will be assigned one paper to read. Teams are expected to develop a 5 – 7 page Powerpoint slide set to summarize the paper. The presentations should be posted to the weekly presentation forum.

There are three modeling homework assignments in this course. Modeling Assignments will be done in teams. The first homework uses the language action notations of the Commitment Management Protocol (CMP) and Actor Transaction Diagrams (ATD) to identify communication and commitment breakdowns in a simple situation. The second and third assignments use the Business Process Model and Notation (BPMN). The student will apply this notation to a set of simple processes.

There will be 8 SAP labs. Students are expected to follow the tutorials and work through the labs. THERE ARE NO ASSIGNMENTS FOR THE LABS.

Forum Discussions

Since this is a distance learning course, the only way for us to communicate and interact is through the use of online forums. FIVE discussion forums will be set up throughout the semester. EACH STUDENT IS EXPECTED TO HAVE AT LEAST ONE ORIGINAL POST AND TWO CONSTRUCTIVE REPLES. The quality of your posts determines your grade for the online forum discussion portion of your grade (20% of the total course grade).

Final Project (In teams)

Objective: To demonstrate the ability to propose a business process improvement initiative and make a business case for such initiative.

Summary: The project involves choosing an organizational context, representing one or more of its business processes, diagnosing how it could be transformed into a better process, providing

recommendations for doing that, and developing the business case for the process improvement initiative.

The final team project will be in the form of a real-life situation where teams will propose a business process improvement initiative in an organizational context and present the business case for such to management. The project will include a written report in a prescribed format and a presentation to class. Additional details will be provided in Moodle as the semester proceeds.

Late Assignments Policy

Unexcused late submission of homework receives a 20% penalty. This means that you start with 8 out of 10 points as the maximum. Assignments submitted after graded assignments are returned or reviewed in class receive no credit.

INNOV8 Game

The course will use the INNOV8 game from IBM. Students will play all three levels of the game and discuss their experience in the on-line forum.

Grading

NJIT Academic Policy has grades for graduate courses assigned as follows:

GRADE	GPA	SIGNIFICANCE
A	4.0	Excellent
B+	3.5	Good
B	3.0	Acceptable
C+	2.5	Marginal Performance
C	2.0	Minimum Performance
F	0.0	Failure

Final grades for IS 684 will tentatively be assigned as follows. There may be slight modifications, depending on issues that arise during the semester.

- Online Forum Discussions   - 20 %
- Reading Assignments   - 20 %
- Modeling Assignments (3)   - 30 %
- Group Project and Presentation   - 30 %

                                  Total: - 100%

Excellent participation demonstrated by preparation for discussion and thoughtful contributions (on-line and in class) will have the effect of **raising** a final letter grade by one value (e.g. B to B+, or B+ to A). Likewise, poor participation demonstrated by consistent lack of preparation for discussion and little or no thoughtful contributions (on-line and in class) will have the effect of **lowering** a final letter grade by one value (e.g. A to B+, B to C+).

Miscellaneous:

- A companion website for the text exists at www.bptrends.com/.

- I will look to place copies of PowerPoint slides that are the basis for lectures in Moodle by the morning before class meetings. Some lectures may be pre-recorded allowing you to view them prior to a class meeting. This would allow for more discussion and team work during class.

- I am generally on campus 4 days per week, but may not be available to meet with students. Please call me to check if I am available to meet with you. If you send me e-mail, please put IS 684 in the SUBJECT LINE so I can filter your e-mails to be read quickly (as opposed to them being ignored as junk e-mail).

Honor Code

Any evidence of cheating in any form, including plagiarism, will be dealt with according to the honor code of NJIT (course failure and suspension or expulsion). Please note: There will be no warnings or chances with regard to cheating. Any discovered case of cheating will be immediately passed to the Dean of Students for further investigation. Cheating is not worth it.

You may not only fail this course but also be suspended from NJIT. The full text of the NJIT Honor Code is available for your review at http://www.njit.edu/academics/honorcode.php.

Spring 2017 Outline/Weekly Schedule – Subject to Minor Modification

Week	Theoretical Topics	Readings	Hands-On Labs / Assignemnts
1	How Work Gets Done	BPC Chapters 1,3; Alter (1,2,3)	Lab 0: Introduction to SAP
2	Collaboration and Coordination	Denning and Yaholkovsky (7); Denning (6); Goldkuhl (10) ;**Dietz (8)**	Lab 1: GBI Basics, Financial Accounting Process
3	Reengineering and Process Change – Part I	**Hammer(11); Davenport (5),** Grant(9)	Lab 2: Procurement Process
4	Reengineering and Process Change – Part II Business Process Management – Part I	Carr (4); Houghton(13), BPC – Chapters 4,5	Lab 3: Fulfilment Process
5	Business Process Modeling-Part I	White (17); White (18,19), OMG (20) Owen and Raj(14)	Lab 4: Production Process
6	Process Level Concerns: Characteristics and Performance	BPC, Chapters 8,9,10; White (18)	Lab 5: Warehouse Management
7	Business Process Management – Part II;	BPC – Chap. 7, Hammer (12), GAO Model	Lab 6: Material Planning
8	Performance and Making the Business Case	BPC – Chapters 6, 11	Lab 7.1: Process Integration
9	Applying Work Systems Theory Project Case Study	Alter (1,2,3)	Lab 7.2: Process Integration(II)
10	Project Working Week	White (18,19), OMG (20) Owen and Raj(14)	
11	Innovation Types, Final Discussions	BPC, Chap 12,13,14, Repenning(15); Teo(16)	
12	TBA		
13	TBA		