



MEMORIAL UNIVERSITY OF NEWFOUNDLAND
Faculty of Business Administration

**Modelling and Implementing Business Processes
Business 2710**

Course Information and Schedule for Winter 2014

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Time and Place

Section 001: Tuesdays & Thursdays, 12:30 – 13:45, BN 1009
Section 002: Tuesdays & Thursdays, 14:00 – 15:15, BN 1009

Prerequisites

BUSI 1000, and English 1110 or 1021

Calendar Description

BUSI 2710 introduces techniques for understanding and modelling business processes and implementing them in modern enterprise systems. Course work will be project-based; students will create small-scale business applications, including web-based applications, using current design and development methodologies and tools.

Course Goals and Learning Objectives

The following goals and objectives are defined by the Faculty of Business Administration. This course is a reflection of those goals and objectives.

Students that successfully complete this course will understand business processes and the role of technology in enabling and supporting them. (Goal)

- Our students will be able to identify, model, and evaluate the efficiency of an organization's main business processes, as they relate to other functional areas, such as accounting, production, or marketing. (Objective 1)
- Our students will be able to improve and redesign a business process using IT and non- IT-based solutions. (Objective 2)
- Our students will be able to identify points of a business process where IT support can improve the overall process, be able to propose high-level requirements for suitable IT support, and assess the impact of the proposed IT on people and processes. (Objective 3)

Course Rationale and Description

Business processes are the fundamental ways of operating a business. They describe the steps that a business takes to achieve its goals and objectives. Some business processes will be very structured, e.g. warehouse management or accounting, others may not be, e.g. product engineering or marketing strategy creation. The effectiveness of business processes to desired business objectives is an operational issue that affects a company's bottom-line. Hence, it is important to manage business processes. This management encompasses activities such as process analysis, process definition, process modelling, process simulation, process implementation, process optimization, process mining, and process evaluation.

Structured business processes can be supported using software called a workflow management system. As the name implies, this software makes sure that work is allocated to individuals in the business, that information is routed to the individuals who need it, that the progress of work can be monitored, and that business decisions that are part of the business process happen on a timely basis.

Because individual steps in a business process require and produce pieces of information, e.g. about an invoice or an account, and typically require use of software systems for completion, there is a strong relationship between workflow management systems and other software in the business, e.g. accounting system, inventory management, etc. Business process and workflow management provides an integrated way of using these resources as part of doing business.

Course Schedule

Class	Date	Module	Readings/Materials	Comment
1	Jan 7	Introduction to business process and workflow management	Video: "A Tale of Two Invoices"	
2	Jan 9	Introduction to the YAWL workflow management system	Textbook Preface (pp. V-vii) Video: "A Tale of Two Invoices"	
3	Jan 14	Business processes and process architecture	Hammer (1990)	
4	Jan 16	Organizational change and change management	Hammer and Stanton (1999) Champy (2006) Video: "The Role of the Process Owner"	
5	Jan 21	Process and Enterprise Maturity Model	Hammer (2007)	
6	Jan 23	Process and Enterprise Maturity Model (Application)	Case (B) "Pinnacle West"	
7	Jan 28	Business Process Improvement – Process Metrics	Video: "Process Improvement at Dartmouth Hitchcock Medical Center"	
8	Jan 30	Business Process improvement – Process Metrics	Case (D) "Body Scans and Bottlenecks"	
9	Feb 4	Business process modelling using Petri Nets	Reisig & Rozenberg (1992) Video: "A Tale of Two Invoices"	
10	Feb 6	Business process modelling using Workflow nets	Textbook Section 2.3 Video: "A Tale of Two Invoices"	Management assignment due
11	Feb 11	Business process modelling	Video: "A Tale of Two Invoices" Case (D) "Body Scans and Bottlenecks"	Computer lab

Class	Date	Module	Readings/Materials	Comment
12	Feb 13	Business Process Improvement using Simulation	Case (D) “Body Scans and Bottlenecks” Textbook Chapter 17	Computer lab
Midterm Break (Feb 18)				
13	Feb 20	Business Process Automation – YAWL overview and architecture	Textbook Chapter 1 Textbook Chapter 7 Textbook Chapter 23	
14	Feb 25	YAWL Language and Design Environment – The control flow perspective	Textbook Section 2.1 Textbook Section 2.2.1 Textbook Section 2.4 Textbook Chapter 3 Textbook Section 8.1 Textbook Section 8.2 Textbook Section 8.5	
15	Feb 27	YAWL Language and Design Environment – The control flow perspective (continued)		Computer lab
16	Mar 4	YAWL Language and Design Environment – The resource perspective	Textbook Section 2.1 Textbook Section 2.2.2 Textbook Section 2.5 Textbook Section 8.2 Textbook Section 8.3	
17	Mar 6	YAWL Language and Design Environment – The resource perspective (continued)		Computer lab
18	Mar 11	YAWL Language and Design Environment – The Data Perspective	Textbook Section 2.1 Textbook Section 2.2.3 Textbook Section 2.6 Textbook Chapter 10 Textbook Section 8.4	
19	Mar 13	YAWL Language and Design Environment – The Data Perspective		Computer lab
20	Mar 18	Extra class		Computer lab
21	Mar 20	Business Process Mining	Textbook Chapter 17 Video: “A Tale of Two Invoices”	Computer lab Process modelling assignment due
22	Mar 25	Other process modelling languages – BPMN	Textbook Chapter 13	
23	Mar 27	Other process modelling languages – EPC	Textbook Chapter 14	
24	Apr 1	BPMN and EPC Exercises	Video: “A Tale of Two Invoices” Case (D) “Body Scans and Bottlenecks”	
25	Apr 3	Extra class		

Assessment and Evaluation

Assessment for this course consists of the following items:

20%	Management case assignment	Due February 6 th beginning of class, uses Case (A) “Siemens Rolm” To be done in <u>groups of 2 to 4 (two to four) students</u>
20%	Process modelling assignment	Due Mar 20 th beginning of class, uses Case (C) “CVS Pharmacy” To be done <u>individually</u>
20%	Weekly Reflections	Due at the end of each week (Sunday 11:59pm, Newfoundland time) To be done <u>individually</u>
40%	Final examination	TBA

Late submissions will not be accepted and will lead to failure on that assessment items. Exceptions are made only for extenuating circumstances (sickness, bereavement, etc.) with valid documentation.

As part of the course, you must keep a weekly reflection (journal/blog/diary) on your wiki page. You must produce one journal entry each week. Your journal entries need not be long (about one to two pages is sufficient), but they should be insightful and reflective and show that you have an informed opinion about the material. Do not be superficial or simply repeat the material. The reading notes for the individual modules contain some questions for reflection. There are no right or wrong answers to these, they are simply there to stimulate your thoughts and you are welcome to reflect on other issues, especially if you have relevant personal experiences.

Some additional tips on writing the reflections:

- You could reflect on what you have learned or what you found interesting or particularly relevant each week? Discuss how and why you think it is relevant or interesting. If you do not think you have learned anything interesting or relevant, you should reflect on why you believe the material was not interesting or relevant to you.
- Make it personal: Use a personal experience or story that relates to the topic. Relating the readings to your own experiences helps in understanding the readings and topics.
- Make it critical: Pick just one argument/point in the paper and critique it thoroughly. Perhaps take the readings and look for counterexamples in your personal experience. Alternatively, talk about both your own experiences and critique some aspect of the readings that doesn't sound right to you. However, being critical means not to simply disagree with something, but to also provide a counter example, a counter argument, counter evidence, and possibly an alternative.
- Relate it to other material: Perhaps there is something in another course you have taken that relates to business processes?
- Follow the thought: Don't leave it at the first thought you have but follow that and see where your thinking and arguments lead you
- Use a spell checker (many web browsers have one, or else copy and paste from Word)!

Your weekly reflections will be marked using the following rubric:

	Proficient	Developing	Basic
Personal engagement	Shows good personal engagement. Brings in relevant personal thoughts or experience and clearly relates them to the course material	Shows some personal engagement. Brings in a limited amount of personal thought or personal experience, but is unclear or superficial about its relationship to the course	Shows little to no personal engagement. The writing is mainly about the material, not how it relates to the student or the student's thought
Strength of Argument	Good argument to support stated position or thoughts on material. Coherent and logical argumentation	Limited arguments to support stated position or thoughts on material, but some significant errors in logic	Little to no argument. Provides mainly opinions or facts and does not demonstrate coherence of thought

	Proficient	Developing	Basic
Engagement with material	Makes extensive use of the reading material and engages with the evidence and argumentation by supporting or critiquing it in depth and detail	Integrates some of the argument or evidence of the reading materials, beyond the main highlights. And/Or integrates some additional relevant critical material not assigned.	Shows only superficial awareness of reading material. Knowledge only of the highlights. Little or no knowledge of the argument or subtle details.
Critical thinking (see also the section on critical thinking in the introduction)	Critiques the material based on good evidence and argument.	Some critical thoughts on material, but little or no substantiating evidence or argument.	Limited critique, focuses mainly on description.
Good writing (see also the section on Good Writing below).	Coherent organization and clear expression. Extensive and appropriate use of vocabulary. Correct grammar and spelling.	Correct grammar and spelling and appropriate vocabulary. Limits to coherence of expression and organization.	Grammatical and/or spelling errors. Confused expression, ill-suited or limited vocabulary and/or incoherent organization of writing.

Please note the Faculty of Business Administration Policy with respect to deferred final exams:

- A student who is prevented from writing a final examination by illness or bereavement or other acceptable cause, duly authenticated in writing, may apply, with supporting documents, to have the course graded or have the final examination deferred. This application must be made within one week of the original date of the examination to the head of the appropriate academic unit.
- All deferred final exams will be held at the commencement of the semester following the one in which the deferred final exam has been approved.
- Deferred final exams will be written on the first Friday of the semester following the semester in which the deferred exam was granted.
- For courses where classes were scheduled to start between 9:00 a.m. and 5:00 p.m., the deferred exam will be on the first Friday afternoon of the following semester. These deferred exams will start at 2:00 p.m.
- For courses where classes were scheduled to start after 5:00 p.m., the deferred exam will take place at 7:00 p.m. on the first Friday evening of the following semester

Course Resources

A number of resources are required for this course, the most important being the course website, textbook, additional course readings, and the set of course notes.

Course Website

The course website is found at <http://wiki.distance.mun.ca>

The course web-site is in the form of a wiki. Wikis are web-sites that you can edit. On the wiki, each student will be provided with an individual page. You can create further pages as needed. The wiki is intended primarily for your weekly reflections. You must create a new page for each weekly reflection on the wiki. The instructor will read and grade your reflections on the wiki.

The wiki is treated as an open system, so there is no expectation of privacy. Everyone can read everyone else's pages and make changes. Please do not put personal information on the Wiki. While everyone can make changes to any page, vandalism (i.e. modifying someone's Wiki contribution without permission) will not be tolerated. Vandalism will be treated as academic dishonesty and will lead to immediate failure of the course.

Using the wiki is easy and you will find a number of tutorials on how to use the wiki on the course web-site.

Required Textbook

ter Hofstede, Arthur H.M., van der Aalst, Wil M.P., Adams, Michael and Russell, Nick (editors): *Modern Business Process Automation – YAWL and its support environment*. Springer Verlag, Berlin, 2009.

You have the following options to obtain the textbook:

- The MUN bookstore should have new and used copies available
- The MUN library has the textbook in electronic form (as a set of PDF files)
- Because MUN subscribes to SpringerLink (the textbook publisher's electronic collections), you should find a link at the SpringerLink site (where the library will direct you to) to purchase a printed copy of the book for \$25
- You may wish to check Amazon.ca or Amazon.com (or other bookstores) for used and new copies

Required Business Cases:

The following four business cases are required for the course. All cases are available for **purchase** from Harvard Business Press at <http://hbr.org/store> Cases (B) and (C) may be available at the MUN bookstore as a course reading pack.

- A) “Siemens Rolm Communications, Inc.: Integrated Logistics Core Process Redesign (ILCPR)” by Donna B. Stoddard and Sirkka Jarvenpaa, Product number 195214-PDF-ENG.
- B) “Creating a Process-Oriented Enterprise at Pinnacle West” by T.S. Raghu, Product number 910E02.
- C) “Pharmacy Service Improvement at CVS (A)” by Andrew McAfee, Product number 9-606-015.
- D) “Body Scans and Bottlenecks: Optimizing Hospital CT Process Flows” by Sunil Chopra, Scott Flamm and Sachin Waikar. Product number KEL592-PDF-ENG.

Required Course Readings

1. Hammer, Michael: The Process Audit. *Harvard Business Review*, April 2007.
2. Hammer, Michael and Stanton, Steven: How process enterprises really work. *Harvard Business Review*, Nov-Dec, 1999.
3. Hammer, Michael: Reengineering Work: Don't Automate, Obliterate. *Harvard Business Review*, July-August, 1990.
4. Champy, James: People and Processes. *ACM Queue*, March 2006.
5. Reisig, W. and Rozenberg, G.: Informal Introduction to Petri Nets. In: Reisig, W. and Rozenberg, G. (eds.) *Lectures on Petri Nets – Advances in Petri Nets*. Lecture Notes on Computer Science Volume 1491, Springer Verlag, 1998.

These course readings are available electronically through the library.

Course Notes

A set of notes for each module is provided on the course web-site. Each note includes the learning objectives, an introduction, comments on the readings, and review questions and exercises. It is recommended that you read the notes before starting on the readings for the class, as they provide an introduction, some context and additional explanation. You should take a close look at the learning objectives and the review questions. After each module you should satisfy the learning objects and be able to answer the review questions. You do not have to do the review questions or hand in any answers. They are optional and are intended to help you learn and assess whether you know the material. The answers to the questions are in the readings for that module, but your instructor will be able to help with the questions if you are stuck. Further, the review questions are similar to the questions you will find on the final exam.

Software

This course will teach you in hands-on way how to design, analyze and implement business processes using modern software tools. To this effect, the following software applications are provided on the course website. While these software applications are also freely available on the internet, *you must use the versions provided on the course website*, as only these are supported. The software is also installed on the computers in the FBA computer lab.

YAWL is free, open-source software and available for Windows, Mac, and Linux/Unix systems. Students should download and install YAWL. Some of the course assessments are to be done using YAWL.

WoPeD is a free, open source software available for Windows, Mac, and Linux/Unix systems. Students should download and install WoPeD. Some of the course assessments are to be done using WoPeD.

ProM is a free, open source software available for Windows, Mac, and Linux/Unix systems. Students should download and install ProM. Some of the course assessments are to be done using ProM.

Video Tutorials

To help you with the YAWL and ProM software, a number of video tutorials are provided on the course website. Use these to help you get started with the software applications.

External Websites

Much more information about the software used in this course is available on the web pages for those software applications. Be aware that the course may use a slightly older than the current version.

- YAWL: www.yawl-foundation.org
- WoPeD: www.woped.org
- ProM: www.processmining.org

Professionalism

Professionalism is essential to success in business. A professional businessperson is competent, knowledgeable, prepared, courteous, and respectful to both peers and customers. A professional atmosphere in the classroom promotes a positive learning environment. Please:

- Prepare properly for all classes
- Arrive on time
- Employ basic courtesy at all times and to all class members:
 - o If you bring your mobile phone to class, turn it off.
 - o If you bring your computer to class, do not distract others by using it for non-course-related activities (e.g., checking Facebook, playing games). The instructor will ban computers from class if he/she decides that there are too many disruptions from their use.

Good Writing Skills

Business administration and management is an area of practice that requires good communication skills. One might go so far as to suggest that management is mostly about communication. Good writing skills are not only a necessity in business and management, but also in the general university environment. Memorial University thinks it is important enough to include in the official calendar. The Memorial calendar is specific about this in Sections 5.6.4 and Section 5.8.3, reproduced below with emphasis added. **I will therefore assess each written assessment piece also on writing, according to the criteria provided in the calendar section 5.8.3 and multiply your assessment by this grade. For example, if your project is assessed an 80%, but your writing is also assessed at 80%, the total would be 64%.**

5.6.4 Good Writing Skills

1. Regardless of the method of evaluation, good writing skills are required for effective communication. Students are, therefore, expected to demonstrate proficiency in logical organization, clarity of expression and grammatical correctness in their writing. For further information refer to Grading - Good Writing.

5.8.3 Good Writing

1. Students at all university levels should have reasonably sophisticated and effective communication skills and are expected to demonstrate proficiency in logical organization, clarity of expression and grammatical correctness. Good writing is expected of students in all courses. Upon graduation students should be capable of expressing complicated ideas clearly and concisely and should be able to develop arguments in a logical manner. When, in the judgement of the instructor, a student persistently fails to display a reasonable standard of writing, the instructor may consider this when assigning a final grade.

2. Good writing is characterized by the following qualities:

- * Content
 - o critical insight and freshness of thought,
 - o clear and penetrating ideas,
 - o perceptive, pure grasp of subject,
 - o intelligent use of primary and secondary sources, and
 - o a sense of completeness about the handling of the topic.
- * Organization
 - o effective introduction and conclusion,
 - o main idea is clear and logical development follows,
 - o smooth transitions, and
 - o good use of details.
- * Style
 - o appropriate, accurate, precise and idiomatic diction, and
 - o sentences varied in kind, length and effect.
- * Mechanics
 - o consistently correct spelling,
 - o accurate use of punctuation,
 - o grammatically correct sentences, and
 - o well organized paragraphing.

Overall Assessment Criteria

Memorial University provides definitions of what letter grades (A, B, etc.) are intended to indicate. I will use these to guide my assessment of your work, and you should use these to guide the preparation of your assessment items:

5.8.2 Descriptions of Letter Grades

- * "A" indicates excellent performance with clear evidence of:
 - o comprehensive knowledge of the subject matter and principles treated in the course,
 - o a high degree of originality and independence of thought,
 - o a superior ability to organize and analyse ideas, and
 - o an outstanding ability to communicate.
- * "B" indicates good performance with evidence of:
 - o substantial knowledge of the subject matter,
 - o a moderate degree of originality and independence of thought,
 - o a good ability to organize and analyse ideas, and
 - o an ability to communicate clearly and fluently.
- * "C" indicates satisfactory performance with evidence of:
 - o an acceptable grasp of the subject matter,
 - o some ability to organize and analyse ideas, and
 - o an ability to communicate adequately.
- * "D" indicates minimally acceptable performance with evidence of:
 - o rudimentary knowledge of the subject matter,
 - o some evidence that organizational and analytical skills have been developed, but with significant weaknesses in some areas, and
 - o a significant weakness in the ability to communicate.
- * "F" indicates failing performance with evidence of:
 - o an inadequate knowledge of the subject matter,
 - o failure to complete required work,
 - o an inability to organize and analyse ideas, and
 - o an inability to communicate.

Academic Conduct

Academic honesty is an integral part of university life. As such, you should be aware of the university regulations on this aspect of the course. I don't expect anyone to intentionally get into trouble over this, but I still wish to draw the following excerpt from Section 5.11.4 to your attention. If in doubt, check with your instructor.

"Plagiarism is the act of presenting the ideas or works of another as one's own. This applies to all material such as essays, laboratory reports, work term reports, design projects, seminar presentations, statistical data, computer

programs, research results and theses. The properly acknowledged use of sources is an accepted and important part of scholarship. Use of such material without acknowledgment is contrary to accepted norms of academic behaviour. Information regarding acceptable writing or by email practices is available through the Writing Centre at www.mun.ca/writingcentre/about/."