

# CIS 4120E (Fall 2008)

## Defining and Innovating Business Processes

### Instructor: Richard Welke

**Director, Center for Process Innovation**  
**Professor, Computer Information Systems**  
**Robinson College of Business**  
**Georgia State University**

<http://www.ceprin.org/index.php?page=richard-welke>

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### ***Catalog Description***

There isn't an official catalog description as this course remains an "experimental" offering (which means it's a new course and hasn't yet gone through the official course finalization process).

***Pre-requisite & co-requisites:*** In principle, a student in this course would have completed CIS 3300 (Systems Analysis) & CIS 3730 (Database Management) to ensure some background knowledge in the areas of information and process modeling. If you have had this or equivalent background, you will find some of the associated content of the course initially easier to understand. If you have not had any prior courses on either data or systems modeling of some kind, you will find this course to be more of a challenge, but surmountable if you are engaged and interested. In any event, you will need some grounding in general technology and be comfortable installing and using software. If you are not that comfortable with technology and you haven't had any prior exposure to modeling of information or processes (e.g. lean or six-sigma modeling, audit modeling, etc.) and you're hoping for an "easy" course, then you should re-consider taking this course.

### ***Course Description***

We make the distinction in this course between two types of "business processes." The first kind is where the primary focus is primarily on the physical flows of goods, people and materials and how the interacting flows and activities can be improved; sometimes called operational processes and their management termed operational management. The second kind is where the principle focus is on the flow of information and its processing and how this combination of activities and information flows can be improved; sometimes called workflows or more recently, business processes and their management called "business process management." In this course the focus is on business processes and their improvement.

Recent advances in information technology (platforms, architectures, etc.) now provide interesting and useful ways to significantly improve these processes, while at the same time making them more agile and amenable to innovation. As significantly, the BPMS software platforms now make it possible to go directly from the models you create in this course to their execution (without having to write any code). By changing the process model, you effectively

means change how the business process actually operates, thus allowing for incremental process improvement without significant costs or delays.

This course focuses on the models, methods, tools and techniques for capturing, evaluating and transforming -- improving, innovating -- information-based business processes. The end objective is for the student to capture an "as-is" existing business process and to then define a much improved "to-be" business process in such a fashion that it can be more easily supported by BPMS's (business process management software suites). The details of how BPMS is used to support business processes is left to a follow-on course, either CIS 4130E (Implementing Service-based Processes) or CIS 4140E (Configuring and Evaluating Business Processes).

The mode of learning will be "problem-based learning" (see later section explaining what this entails) in which the students and their groups develop and become the primary source of knowledge on this topic. More on this is provided in a separate section below.

## Course Details

<b>Course</b>	CIS 4120: Defining and Innovating Business Processes CRN: 86766 WebCT/VISTA Listing: <i>E DEFINE AND INNOVATE BP - Fall Semester 2008 CIS-4120</i> <i>NB: This site will be set up the first week of class</i>
<b>Semester</b>	Fall 2008
<b>Class Sessions</b>	Tuesdays 4:30-7:00 Official: Sparks Hall 135; Unofficial: CBA 821 (after 1 <sup>st</sup> week) (CBA is the Robinson College at 35 Broad Street, NW)
<b>Instructor</b>	Dr. Richard J. Welke Office: CBA 423 (4th Floor CBA building) email: <a href="mailto:rwelke@gsu.edu">rwelke@gsu.edu</a> ; phone: (404) 413-7863
<b>Assistant</b>	Tim Olsen (Ph.D. student, CEPRIN) Office: CBA PhD area (4 <sup>th</sup> floor CBA building) Email: <a href="mailto:Tim.Olsen@eci.gsu.edu">Tim.Olsen@eci.gsu.edu</a>

## Courseware & readings

### Text and Readings

At present, there isn't a true textbook for this area. Rather most of the published books in this area are written for professionals, by professionals. This course will draw from a variety of sources. An initial set of suggested readings will be provided and evolve, as the semester evolves, in advance of the topics covered. Much of this will be derived from the tutorials and support files associated with the primary software used for the course. However you, the student, are expected to discover additional readings and to share these with your fellow classmates.

One major learning objective of the course is for the student to be able to model "as-is" and "to-be" business processes using an open standard modeling specification called BPMN (business

process modeling notation). Very recently two books have been published on this convention (with several more about to appear).

Briol, Patrice, **BPMN: the Business Process Modeling Notation – Pocket Handbook**, Lulu Press, 2008 (self-published book at [www.lulu.com](http://www.lulu.com)), ISBN: 978-1-4092-0299-8; approx. \$18.

About two weeks after this book was announced, another one came out:

Debevoise, Tom & Rick Geneva, **The Microguide to Process Modeling in BPMN**, TIPS Technical Publishing, 2008 (another self-published book; it can be ordered via Amazon books or [www.booksurge.com](http://www.booksurge.com)), ISBN: 978-1-4196-9310-6; approx. \$14.99 at booksurge.

Either will work for the course and in some ways they're complementary. Of the two, the more recent (by two weeks) – the Debevoise book – is somewhat more comprehensive, and would be my current choice.

As well, I expect to be able to obtain, free-of-charge, a general overview book on business process management:

Garimella, Kiran, Michael Lees & Bruce Williams, **BPM Basics for Dummies**, SoftwareAG, 2008.

The basic repository for the instructor-provided readings will be made available in uLearn (also known as WebCT/Vista). We will form a Google Group for the course that you'll be invited (and expected) to subscribe to. Here, you can post both your own reading discoveries as well as comment on others.

## Student Computer Requirements

It is the intent for the students of this course to be exposed to “professional grade” software applicable to the area of business process analysis and improvement. Such software, while available free of charge through various academic alliances, is nevertheless, demanding on hardware resources.

### Software

At a minimum, there will be four pieces of software you will need to install and use on your computer. The software we will use only runs under Windows (no Mac version, sorry). It should be noted that most BPM software also only runs on Windows-based computers. The software is also rather large in size. If you have an old computer you will be wise to consider updating it with sufficient disk space, reasonable memory (I suggest at least 2GB – memory is nearly free these days), and a decent graphics card.

1. An IBM-distributed BPM (business process management) game called INNOV8 (180MB).
2. The business process modeling software. For this semester we are going to use IBM's WebSphere Business Modeler, version 6.1.2 (just recently released; 1.1 GB).
3. Lotus Forms Designer and Viewer (approx. 500MB). We'll use this software in conjunction with Business Modeler to create the “human interaction task” interfaces. This will also be used for “storyboarding” (where you get to demonstrate what a business process will look like to the end users without having to actually implement it in IBM's WebSphere Process Server and related software.

The software will be installed on the classroom computers, but it isn't generally available on student lab computers. To facilitate moving between your home computer and the in-class

computing environment, I suggest you either bring your laptop computer with you, or purchase a 2GB+ USB key-drive/memory stick that you can use to keep your “workspace” on.

## ***Overall Course Learning Objectives (to be updated)***

The overarching objective is to enable you to begin functioning as a business process analyst by exposing you, through a sequence of materials and exercises to the stages and models of discovering, critiquing, diagnosing and improving/innovating the salient aspects of a business process and doing this in a manner that has wide industry support as well as direct technology enablement.

To accomplish this overall objective we will pursue, over the duration of this course, the following sub-objectives:

1. Understand the nature of business processes and develop the skills necessary to effectively capture them in models that can be used to define critique, evaluate and transform them.
2. Directly related to the preceding objective (and somewhat a by-product of it), is to develop a professional vocabulary – both the words and contextual meaning -- surrounding business processes and their transformation, from the perspectives of general business, business analysis, and IT (information technology).
3. Understand the relationship between processes and services -- be able to examine an existing business process and associate it with one or more business services, and conversely.
4. Be able to look within an “as-is” (existing) process and explicitly identify and model (according to generally agreed principles or standards) its main components (activities, tasks, events, rules, roles, metrics, etc.).
5. Specify the underlying business data associated with a business process.
6. Augment the business process model with human-interaction components, principally forms.
7. Specify business rules that govern underlying operations in a generic fashion.
8. Know how to assess alternative process/service designs, both statically and dynamically (simulation) using appropriate tools and based upon your model descriptions.
9. Develop skills in “ideation” and their realization as innovations to the service(s) offered by the business process, as well as improving the overall conduct of the underlying process itself.
10. Understand and be able to incorporate into your own work, the staging and approaches necessary to lessen organizational resistance to the proposed business process transformation, and ensure a positive, if not enthusiastic adoption of the planned change.
11. Be able to evaluate and select supporting tools to aid in the capture, design and evaluation of business processes, and to be able to use such tools in the conduct of a business process transformation project.
12. Know how the (to-be) business process model you developed may/will interface with business process management software suites (BPMS), service-oriented architecture platforms, portals and other modern IT infrastructure platform software and some of the major standards that govern this use.

Overall, the objective of the course is to equip you with sufficient skills and knowledge so that you can begin to function as a business process analyst capable of making effective use of modern, professional business process model capture and analysis tools.

## ***Pedagogical Approach: Problem-based Learning (PBL)***

Extracted from Penn State's PBL web site (<http://pbl.ist.psu.edu/pbl>)

### **What is Learning?**

"The real goal of teaching is to persuade students to initiate their internal learning processes."  
– Robert Leamson

The cognitive sciences contradict notions that the mind records like a camera and that learning is merely absorption. We know that the mind builds mental constructions that order experience. The brain represents rather than records reality. Even sight is an act of construction and depends as much on brain processes as on the actual world it seeks to represent. Like an artist, the brain selects and seeks constancies to make up our images of the world. From sound and light waves, combined with previous models, it constructs information like "The cat is eating a mouse." And it creates knowledge like "Cats eat mice" that can be used later to predict and control.

In the last thirty years we have discovered more about how people learn than in the rest of human history. Much of the knowledge resulted from the invention of computers. Computers have provided new ways of thinking about computation, memory, and perception. In some ways the human brain is like a computer but in important other ways it is not. The brain is a "computer" that is wet, emotional, self-programming and far, far more powerful and flexible than any device ever built.

The good news is that this new knowledge contains ideas on how to make learning more effective and more efficient for students. The bad news is that what we usually do in classrooms contradicts those ideas. As a result, trying to become a good student means acquiring learning habits that promote poor memory, practicality, and creativity. Worst of all we lose the joy and excitement of learning. Since we are all humans who learn all of the time, we have other habits of learning we use outside of school that promote long term memory, easy transfer to other situations and many new ideas. Now, your job is to reduce the bad habits (memorize stuff to regurgitate on tests) and promote the good ones (start with what you know, try it out, and improve).

Why is how you learn important? If you read papers and magazines or watch television it appears that our educational system is a disaster. That is not exactly true. Today the world of work, citizenship, and daily tasks require more knowledge and thinking skills than ever. The days of going to work and having someone tell you what to do are disappearing fast. We call our times the age of information. It means that we all need to be experts, leaders, managers, creators, and innovators. The necessary knowledge to do these things changes rapidly. What you will learn in college quickly will be obsolete when you graduate. As a result, you must prepare to learn throughout your lifetime.

Political issues concerning the Internet, social security, education, and defense require sophisticated citizen understanding. We need to know what information to seek and what positions to support. No longer can we decide such issues the way our parents would or according to some party or ideology. Purchasing everything from communication and computing devices to cars, homes and air travel requires knowledge. We need to know our own needs, the range of options and costs in time and money. Deciding on what work to do, where

to live, what kind of a family to have, all requires extensive knowledge. Again, that knowledge changes rapidly.

Chris Galvin, CEO of Motorola says, "Motorola no longer wants to hire engineers with a four-year degree, we need our employees to have a 40- year degree."

One of the major reasons that you and your parents are paying for a college education is so you will have a more interesting and fulfilling life. Such a life has challenging jobs, better income (which allows you to live in good communities, to have comfortable surroundings, to travel, and to enjoy hobbies), and the ability to think and communicate that makes a difference in the safety, prosperity, and freedom of your community.

To get and hold a good job according to leading companies requires that you be able to do seven basic things:

- Learn to learn
- Communicate and collaborate with others
- Think creatively to solve novel problems
- Be technically competent
- Understand the opportunities and constraints of the global economy
- Lead as well as follow, always taking initiative
- Manage your career to develop new skills and knowledge.

What is wrong with the old teacher-stand-up-and-talk-student-sit-and-listen learning? It doesn't meet the needs. It is too slow, too shallow, too inefficient and not much fun. Students retain little of what they learn after even a few weeks. Students rarely can apply what they have learned to the unpredictable problems of life and work. Students get little practice in thinking for themselves or framing problems that interest them. As a result, students come to see learning as something grim to be avoided.

Learning is an active process of making changes in the mind's representations by reasoning about the world -- not just taking it as it comes. Learning means breaking, making, and remolding connections in our brains. The physical structure of the brain and the inferred representations of the mind depend not only on innate processes, but also on prior experience and knowledge.

Everyone has a different brain configuration because everyone has a unique body of experience. Imagine a theory-driven robot that navigates the world by generating maps and acting upon them. When it fails -- hits something or careens off a curve -- it changes its internal maps until these become more accurate and useful, but never complete. Though our brains work like this, we aren't robots. This gives us an advantage: Learning gives us pleasure, just as eating, sleeping, or an enjoyable afternoon at the beach.

### **What is Problem-based Learning?**

Problem based learning is the simple but revolutionary idea that *problems should come before answers*.

Problem based learning gives you opportunities to examine and try out what you already know; discover what you need to learn; develop your people skills for achieving higher performance in teams; improve your writing and speaking abilities, to state and defend with sound arguments and evidence your own ideas; and to become more flexible in your approach

to problems that surprise and dismay others. Despite the work and effort it requires, PBL is never dull and can be fun.

Instead of instructors giving answers and then testing to see if students have memorized them they present problems to tackle before teaching begins. Beginning with a problem puts students in the driver's seat. They can use and explore what they already know, their hunches, and their wildest ideas to try for a solution. In the process they can develop an inventory of what they know and what they need to know. Once students get a sense of what they need to know they can set off to question instructors or classmates, plunder the library, surf the net, or seek out experts to satisfy their curiosity.

In PBL, the student isn't expected to simply memorize knowledge. They are expected to apply knowledge to real situations. This shows that they have an understanding of what is being taught, instead of just the ability to restate facts. So before students learn new information, instructors present them with a problem. They select and pose the problem so students will discover that they need to learn new knowledge and skills. Often this involves failures as students discover that what they already know won't work. It involves a lot of talking – stating ideas, defending propositions, and criticizing. Students have to unlearn to acquire new knowledge so they can solve the problem.

PBL is team based. Most of the work on problems and projects is done in teams of three to six students. This requires instructors to design problem scenarios that raise the bar for thinking and searching. It also requires students to become effective managers of time, projects and meetings. Both requirements demand creative efforts to succeed. Research shows team-based PBL to be effective but also fraught with unintended outcomes such as slacking, pressure on ambitious students to do all the work, and divided work so no new learning has to be done. Both students and instructors need to be diligent in spotting and correcting such failures.

## Section 2: Problem Solving

Problem solving is not the same as doing an exercise. In “exercise solving” we recall and apply past routines. We work forward from the past to the solution. Usually there is one right answer. In “problem solving” we begin unsure about how to proceed and what new knowledge we need for a solution. We work backwards by starting with a plausible solution and then search for the necessary knowledge to support it, change it, and apply it. There is no single right answer, but better and worse solutions. Solving problems is more difficult. The good news is you have been doing it for years. Your first task is to think about how you go about solving problems like buying a car, choosing a major, or getting your roommate to pick up clothes. Jot down some of the steps you took and then read on.

There are many ways to solve problems and lots of experts to tell you how. Nearly all of them agree that groups can solve problems better than individuals if they plan and take certain steps. This outline will introduce you to the basics.

**Step 1: Explore the issues.** What do I already know and believe about this topic and how can I share that with my teammates?

*Suppose you have been assigned the problem: “Do computers improve learning?” Everyone on your team probably has experience with computers in classrooms, has read articles, and heard opinions. What is the best way to get that information at everyone’s disposal? One time-honored method is tell each other stories about your experiences – what you have seen, what you have done, and what you have heard. Taking the time to do that will give you a good foundation to take the next step. Besides, telling stories is fun and it is a prime skill in an information-saturated world. Stories organize*

*information and knowledge in forms that are easy to remember and easy to adapt and apply to new experiences.*

**Step 2: Define the problem.** What do I think is the problem we have to solve and how can my team agree on a problem statement?

*Defining the problem requires much discussion and inquiry. The goal is to understand the problem and create rich mental images of the situation that includes the conditions, constraints, and criteria of an acceptable solution. (Send your problem statement to the instructor to see if you are on the right track.) If you are assigned the question: "Do computers improve learning?" you can see that there are many different ways to frame the problem in the question. You might conclude that the problem is research – A) "What studies have been done about student learning improvement when they use computers and what do they tell us?" You might decide that the issues are more complicated by taking the question as a hypothesis – a possibly true generalization. Then the problem is: B) "Is this a reasonable hypothesis that is worth the time and cost to test?"*

**Step 3: Investigate solutions.** What do we have to know and do to solve this problem? This step requires much discussion. Play around with the problem statement and your knowledge and experience. Search for links, uncover assumptions, and identify what your team knows and what it needs to know. Make sure you agree on a solution.

- *If the problem above were A) for example, you might need to review the research to find the latest and most comprehensive studies concerning computers and learning.*

*You would need to discover what kinds of studies have been done, estimate their reliability (which might take you on a side-trip in statistics), and judge what you can infer from the cumulative evidence.*

- *If the problem were B) you might look for theories of learning that support or debunk the hypothesis and indicate whether it is worth investigating. You would be asking: What do we know about how people learn and does that suggest that computers could help?*

**Step 4: Research the knowledge** and data that supports your solution. Your team needs to plan the work, assign tasks, and set deadlines.

- *Discuss possible resources: A) course sources such as textbooks, lectures, and instructor supplied citations and suggestions, B) library sources (ask a librarian for help in locating the best sources and search strategies, and C) web sources (web sites are easy to access, but they are risky because they differ greatly in reliability. You have to discriminate between the sites of experts and sites like "Ralph's pretty good solutions." (When in doubt about reliability, ask the instructor.)*
- *Schedule assigned tasks, setting deadlines that allow you time for each team member to teach others about their findings.*
- *If your solution seems well supported and you can create a compelling argument for it, proceed to the next step. If not, re-do steps 3 and 4.*

**Step 5: Write your solution** and submit. Use your best communication skills to state your solution clearly and support it with relevant arguments and evidence. Leave enough time for reviews of organization, lively writing and proofreading. Don't mess up good thinking and research with a sloppy presentation.

**Step 6: Review your performance.** This step is easy to overlook, but it is crucial to improving your problem-solving skills. When you get an evaluation of your solution go over it individually and as a team to see what you did well and what mistakes you made. Mistakes are opportunities for learning. Discuss them to plan improvements on the next problem.

## What About Grades?

Problem based learning provides learners with the opportunity to become self-coaching. It helps you learn to evaluate your own performance and figure out how to improve. Every first-rate athlete does that. Mark McGuire listens to his manager and to the hitting coach, then he uses their comments to improve his swing, his timing, his stance and all the little details that when he gets them right mean record-breaking homeruns. He is his own coach ultimately, changing other players' and coaches' ideas about what is possible in homerun hitting. That should be your goal as developing information scientist and technician – to use your instructors' evaluations and their models of expert performance to develop your own theory of coaching.

*“But what about grades?”* Grades are one of the most vexing problems of education. They are *meant* to tell students how well they are performing so they can change. If we were learning jump shots, the “grades” would be all the balls bouncing off the rim – the F’s and D’s and all the balls twitching the nets – the A’s and B’s. We wouldn’t need any coach to tell us about our performance. Her job would be to help us perform better by watching our shooting stance, the arch of our ball, our follow-through and so on.

How do you know if your argument is sound, your presentation effective, your explanations meaningful, and your understanding useful? Schools use the mechanism of grades to tell you and to introduce coaching activities. They can also use grades to control – to force you to read assignments, be quiet in class and regurgitate back to teachers what they want you to say or write. Students can use grades to reflect on and improve performance or they can use grades to avoid the struggle of learning. “What do I have to do to get an A” becomes a frequent and vexing question.

Grades as feedback help you learn and become self-coaching. Grades as rewards and punishments take the fun out of learning and make classes boring, but without risks. Do you remember that learning is fun and rewarding in itself? In fact, when the brain learns something it releases the chemicals that produce the same delirious happiness that runners sometimes achieve. Learning is also frustrating and demanding. There are times when we would just rather someone tell us what to do so we don’t have to go through all the practice and failures. If you don’t have periods of frustration and periods of excited happiness you aren’t learning – or not very much.

Problem based learning was invented to promote a passion for learning. Medical schools found that after earning their degrees a large percentage of doctors quit reading any medical research. That meant that many physicians were prescribing treatments that were out of date. The cause of this lack of life-long learning was simple. The doctors had come to hate learning. Listening, reading, and regurgitating memorized descriptions, terms, and formulas had wrecked their ability to enjoy medical learning.

A similar problem occurs among I/S graduates at many schools. People who hire them into the information technology sector report that graduates don’t like to learn. “What do you professors do to them?” one CEO asked me. “Whatever it is, you make them hate learning.”

The best way to get some fun out of learning is to use the grades instructors give you as scores that you want to improve. Like dropping a pass or missing a free throw, a low score on an exercise doesn’t mean you are a bad person – it means you made a mistake. You have to find out what you did wrong and try something different. That’s the way we learn best -- by failing.

As strange as it seems the human brain is failure machine. It generates models of reality, acts on them, and adjusts or creates new models based on failures. Look at the life of a successful

entrepreneur, author, artist or scientists and you will find a history of failures. Successful people use the failures to improve. Others worry over failure and try not to take chances. But there is not much to learn from success – indeed, we often learn the wrong things.

If you don't understand what you did wrong, contact your instructor or teaching assistant. Don't relax until you know exactly what you did, why you did it, and how to do it better the next time. If you read an assignment and can't understand it, don't keep reading it over and over. Get a classmate and talk about it. Discussion is a great learning tool. It helps you find out what you already know and it helps you look at ideas through different perspectives.

The less you worry over grades, the more likely you will learn. Don't work for the grade, work for the joy of doing a job well. The correlation between grade point averages and success in life – measured by satisfaction with work, family, community, plus income level – is close to zero. What does that mean? Mostly that the ability to memorize stuff doesn't help much in the work world. The abilities to understand and solve problems do pay off, but both require students to fail and learn.

Go for the learning. Watch yourself get better at arguments, at explanations, at finding sources. Take every opportunity to teach others. As your skills and performance improve your grades will follow. Your job is to become a passionate and life-long learner. That only comes from inner motivation – not the desire to please others.

## ***Guest lecturers and instructors***

I may be away for one or two sessions of our class. If/when this occurs, in my stead is a “professor-in-training” (Tim Olsen) who is also a Ph.D. student doing research in both the business process space as well as the PBL space. He will take my place for these two sessions.

I also hope to secure one, or possibly two “real-world” guest speakers for the course. The timing and topic will of course depend upon who they are and their typically busy professional schedules.

## ***Project & Exams***

**Course Project** (Three or four-person teams). The material of this course is best learned by applying it to a real-world situation. In addition to the session exercises, each group will be responsible for completing the first stages of a business process development life cycle of discovery, analysis, evaluation/critique, proposed improvement/innovation, and simulation/story-boarding. In short, each team will create and “as-is” and a “to-be” demonstration model of their selected business process as well as the justification for the proposed transformation.

In order to provide students with a context in which to apply these concepts, student's will be asked to form groups of four, and to initially identify a business service that has an underlying, information-based business process at least one of the students can gain direct access to (either through their own work, or through usable connections with relatives, friends, etc.). The formation of the group should take this access into consideration.

The details of the course project will be provided in a separate document: “CIS 4120 Student Project Handbook” that will be available on the uLearn class web site. It should be mentioned that there are several deliverables for this project: one mid-point assignment that will be handed-in per the course syllabus and a final written project write-up. My assistant or I are quite willing to discuss your project with you during the class or in a separately scheduled

meeting. You may request a meeting by email and I will do my best to schedule a session with you to answer questions and make suggestions. The intent of the course project is to incorporate each topic of the course in the context of the chosen process/service.

There will *not* be a final exam in the course. The course project, which is intended to capture most aspects of the course, combined with a “comprehensive assignment” to be done individually, will serve as the equivalent of a final exam.

## ***Class Schedule (approximate guide and subject to change)***

Below is a first-cut at the schedule of topics, etc. for the course. This will be filled in more completely once I have a better handle on the students and their capabilities.

Cl.	Date	Primary Reading	Milestone/ Submission	In-Class Work			Week's Outside-Class Work
<b>Module A: BPM Overview</b>							
1.	Aug. 19			Introduction, course overview & IINOVS8 BPM Game	Lvl-1 of game		Level 2 of game
2.	Aug. 26	R2	Teams formed	Discussion of game	BP methodology, metrics & Process discovery	IC-1	AH-1: Service encapsulation & metrics
<b>Module B: Process Modeling (Discovery)</b>							
3.	Sept. 2	R3	Installation of TBS3 software; do TBS3 tutorial	AH-1 converge, present, discuss	Process modeling - activities and flows	IC-2	AH-2: Converting simple use case to TBS3 model
4.	Sept. 9	R4	AH-2 for grade	AH-2 converge, present, discuss	Process modeling - gateways	IC-3	AH-3: Representation of multi-path process flows
5.	Sept. 16	R5	AH-3 for grade	AH-3 converge, present, discuss	Process modeling - events	IC-4	AH-4: Representation of event-influenced process
6.	Sept. 23	R6	Proj-1: Definition	AH-4 converge, present, discuss	Review, synthesis, lessons learned,	IC-5	AH-5: Converting complex use case to BPMN process model
<b>Module C: Going from the “As-is” to the “To-be” (Critique, Improve, Innovate, Assess)</b>							
7.	Sept. 30	R7	AH-5 for grade	In-class Quiz on modeling	Critiquing the As-is process	Discussion on Quiz	AH-6: Critiquing AH-5
October 1: Last Day to Withdraw to possibly receive a W							
8.	Oct. 7*	R8		AH-6 converge, present, discuss	Innovating a process	IC-7	AH-7: Innovating AH-5

9.	Oct. 14*	R9	Proj-2: As-is	Present: As-is	Implementation & change management	IC-8	
<b>Module D: Data, Forms &amp; Rules</b>							
10.	Week of Oct. 20	R10	Project status review	<b>One-on-one sessions with each project group</b> Select meeting time during this week (Wed-Fri) - 1hr.			Proj-3: To-be
<b>Optional: BPMS usage at Autotrader talk (Wednesday, Oct 22<sup>nd</sup>, 7:15-9:45, AH324 in conjunction with CIS 4980)</b>							
11.	Oct. 28	R11	Proj-3: To-be	Overview of process simulation (covered in more depth in CIS 4140)		IC-10	AH-11: Simulating and assessing a simple BP
12.	Nov. 4	R11	AH-11 result for grade	Present: To-be	Defining business rules: Why & how	IC-11	AH-12: Define a business rule for AH-5 scenario
13.	Nov. 11	R13	AH-12 for grade	Guest lecturer on BPMS			
14.	Nov. 18	R12		Data models & human interactions		IC-12	Take-home final case (due Dec. 4 <sup>th</sup> )
<b>Nov 26: Thanksgiving Holiday</b>							
15.	Dec. 2		Project report due	Project presentations in class			

## Grading

As noted in a preceding sub-section (“what about grading”) PBL-based learning is not optimized for outcome grading but, rather learning and learning how to learn, based on a set of problems. That said, a final grade nevertheless has to be rendered ☺.

<b>Component</b>	<b>Weight</b>
<i>Instructor assessment of in-class group problem solutions and general participation</i>	15 %
<i>In class exam quiz</i>	10 %
<i>Hand-in assignments (take-home portions)</i>	15 %
<i>Project presentation</i>	20 %
<i>Project report</i>	20%
<i>Final comprehensive take-home assignment</i>	20%
<b>Total</b>	<b>100%</b>

The course grading, as required by the College, will be on a +/- grading system. The final grade is determined by computing your total weighted score out of 100, rounding off to the nearest integer value. The final grade will be determined by computing your total weighted score out of 100, rounding off to the nearest integer value.

*The percentage grade will be converted to a letter grade where a percent grade is assigned, as follows:*

Letter grade	Nominal value	Range conversion	Meaning
A	95	94-100	Excellent; hard to improve upon
A-	91	90-93	Very professional
B+	88	87-89	Above normal professional expectations
B	85	83-86	Expected professional performance
B-	81	80-82	Slightly below what would be professionally expected
C+	78	77-79	A significant flaw or multiple minor flaws, but generally acceptable
C	75	73-76	One or more significant flaws that would require professional rework
C-	71	70-72	Both significant and minor flaws that border on unacceptable professional work
D	65	60's	Unacceptable as it stands but possibly salvageable with work
F	0	< 60	Reject; well below minimal expectations

## **Official CIS Department Class Policies**

1. Prerequisites are strictly enforced. Students failing to complete any of the prerequisites with a grade of "C" or higher will be administratively withdrawn from this course with *loss of tuition fees*. **There are no exceptions, except as granted by the instructor with the approval of the department.**
2. Students are expected to attend all classes and group meetings, except when precluded by emergencies, religious holidays, or bona fide extenuating circumstances.
3. Students who, for non-academic reasons beyond their control, are unable to meet the full requirements of the course should notify the instructor, by email, as soon as this is known and prior to the class meeting.
4. A "W" grade will be assigned if a student withdraws before mid-semester if (and only if) he/she has maintained a passing grade up to the point of withdrawal. Withdrawals after the mid-semester date will result in a grade of "WF". See the GSU catalog or registrar's office for details.
5. Spirited class participation is encouraged and informed discussion in class is expected. This requires completing readings and assignments **before** class.
6. All exams and individual assignments are to be completed by the student alone with **no** help from any other person.
7. Collaboration within groups is encouraged for project work. However, collaboration between project groups will be considered cheating.
8. Copying work from the Internet without a proper reference is considered plagiarism and subject to disciplinary action as delineated in the GSU Student Handbook.

9. Any non-authorized collaboration will be considered cheating and the student(s) involved will have an Academic Dishonesty charge completed by the instructor and placed on file in the Dean's office and the CIS Department. All instructors regardless of the type of assignment will apply this Academic Dishonesty policy equally to all students. See excerpt from the Student Handbook below on **Academic Honesty**: (Abstracted from GSU's *Student Handbook Student Code of Conduct "Policy on Academic Honesty and Procedures for Resolving Matters of Academic Honesty"* - <http://www.gsu.edu/~wwwreg/ugcat2000/academic/honesty.htm>)

As members of the academic community, students are expected to recognize and uphold standards of intellectual and academic integrity. The University assumes as a basic and minimum standard of conduct in academic matters that students be honest and that they submit for credit only the products of their own efforts. Both the ideals of scholarship and the need for fairness require that all dishonest work be rejected as a basis for academic credit. They also require that students refrain from any and all forms of dishonorable or unethical conduct related to their academic work.

Students are expected to discuss with faculty the expectations regarding course assignments and standards of conduct. Here are some examples and definitions that clarify the standards by which academic honesty and academically honorable conduct are judged at GSU.

**Plagiarism.** Plagiarism is presenting another person's work as one's own. Plagiarism includes any paraphrasing or summarizing of the works of another person without acknowledgment, including the submitting of another student's work as one's own. Plagiarism frequently involves a failure to acknowledge in the text, notes, or footnotes the quotation of the paragraphs, sentences, or even a few phrases written or spoken by someone else. The submission of research or completed papers or projects by someone else is plagiarism, as is the unacknowledged use of research sources gathered by someone else when that use is specifically forbidden by the faculty member. Failure to indicate the extent and nature of one's reliance on other sources is also a form of plagiarism. Any work, in whole or part, taken from the Internet or other computer based resource without properly referencing the source (for example, the URL) is considered plagiarism. A complete reference is required in order that all parties may locate and view the original source. Finally, there may be forms of plagiarism that are unique to an individual discipline or course, examples of which should be provided in advance by the faculty member. The student is responsible for understanding the legitimate use of sources, the appropriate ways of acknowledging academic, scholarly or creative indebtedness, and the consequences of violating this responsibility.

**Cheating on Examinations.** Cheating on examinations involves giving or receiving unauthorized help before, during, or after an examination. Examples of unauthorized help include the use of notes, texts, or "crib sheets" during an examination (unless specifically approved by the faculty member), or sharing information with another student during an examination (unless specifically approved by the faculty member). Other examples include intentionally allowing another student to view one's own examination and collaboration before or after an examination if such collaboration is specifically forbidden by the faculty member.

**Unauthorized Collaboration.** Submission for academic credit of a work product, or a part thereof, represented as its being one's own effort, which has been developed in substantial collaboration with another person or source or with a computer-based resource is a violation of academic honesty. It is also a violation of academic honesty knowingly to provide such assistance. Collaborative work specifically authorized by a faculty member is allowed.

**Falsification.** It is a violation of academic honesty to misrepresent material or fabricate information in an academic exercise, assignment or proceeding (e.g., false or misleading citation of sources, the falsification of the results of experiments or of computer data, false or misleading information in an academic context in order to gain an unfair advantage).

**Multiple Submissions.** It is a violation of academic honesty to submit substantial portions of the same work for credit more than once without the explicit consent of the faculty member(s) to whom the material is submitted for additional credit. In cases in which there is a natural development of research or knowledge in a sequence of courses, use of prior work may be desirable, even required; however the student is responsible for indicating in writing, as a part of such use, that the current work submitted for credit is cumulative in nature.

# ***CIS 4120 Class Policies***

## **Classroom Attendance**

To buttress the (CIS) departmental policy that attendance is generally expected at all classes, class participation grades will be significantly reduced for unexcused absences. Moreover, the nature of PBL requires that you actively participate in team problem solving during the class time. In the event of an absence, you are responsible for receiving all administrative and course announcements given in class. If you do not expect to attend a session, email both the instructor and your team members along with the reason for your absence. One absence is excused, although the participation grade is zero. The second absence garners a minus 3 points/absence on your *overall final grade* (i.e. against 100 points) unless you can provide a compelling reason for the absence.

## **Classroom Timeliness**

Related to attendance is being on time. While travel on Atlanta's thoroughfares can be vexing at times, you're expected to plan your departure and arrival times so that you arrive to class at or before it begins. Multiple late arrivals will be treated as an unexcused absence.

## **Class Contribution**

Individual contributions to class sessions are important and will be evaluated as a component of the course grade (participation). This component will be based upon your questions asked as well as responses to questions asked of in-class presentations, cases and exercises.

# ***Instructor Expectations***

I'll cover these in our first two sessions. However, here are some basics:

1. Please ensure that you're GSU student email account (@student.gsu.edu) is properly forwarded to whichever account you actually read your email from. I only send official course emails (and attachments) to this email address. It is your responsibility to ensure this works and that you're able to receive emails and attachments at whatever email account you may choose to forward this to.
2. As this is an interactive class (the nature of the PBL approach) you're expecting to attend all sessions *and* participate. Frequent tardiness or absence will result in a substantial reduction in your course grade.
3. Eating in class or the use of cell phones is not allowed.
4. The classrooms we'll be using are computer equipped. That's because we will use a lot of software. It is not for your convenience to check emails, IM's, or visit unrelated web sites, etc. You're welcome (encouraged) to bring your own laptop/notebook computer and use it instead, provided you have the software loaded and running related to the course.