

COURSE TITLE BLACKBOARD SITE	Course Number and Name: OPM3113 Operations Management Fall 2011 – http://my.ltu.edu and select CRN 2107
INSTRUCTOR	Faculty Name: Kioumars Paryani Title and Organization: Dr. (Ph.D.), College of Management Contact Information: kparyani@ltu.edu Office hours: Wimba Classroom Session and by appointment My office hour will be online through a Wimba Classroom session. This provides an opportunity for you to discuss your course work issues and ask questions on the lectures or the assignments. You may still send me emails or make one-on-one appointments if needed.
SCHEDULE	Semester start and end dates: Sep 07 - Dec 18 See http://www.ltu.edu/registrars_office/calendar_final_exam.index.asp for LTU academic calendar information.
LEVEL/ HOURS PREREQUISITE	Undergraduate Degree / 3 credit hours Admission / prerequisite requirements: Basic knowledge of mathematics and statistics. Ability to use Word and Excel.
REQUIRED TEXT (See Blackboard for additional resources)	Robert S. Russell and Bernard W. Taylor III. Operations Management: Creating Value Along the Supply Chain, 7 th edition, John Wiley & Sons, Inc., Copyright 2011. ISBN-13 978-0-470-52590-6 Note: To have access to the publisher's web site resources, WileyPLUS which includes the complete text, must purchase with Code (i.e., a Code which allows access to publisher's web site). You are encouraged to do so, because it may help you with your learning. Available for online purchase through LTU Bookstore at: http://lawrence-tech1.bkstore.com/bkstore/TextbookSelection.do?st=489 Supplementary Readings: Will be assigned
ADDITIONAL RESOURCES	LTU Online student resources: http://www.ltu.edu/ltuonline/
TECHNICAL SUPPORT	Technical support for using Blackboard is provided by the Helpdesk, 248.204.2330 or helpdesk@ltu.edu . Send the Help Desk a form detailing any issues by clicking here http://tinyurl.com/3yqrvne .

COURSE SCHEDULE FOR COLLEGE OF MANAGEMENT (GRAD) SEMESTER COURSES

This fully online course begins with a partial week online course orientation period (Sep 07 – Sep 11) to familiarize yourself with the online learning environment and to meet online or via the phone with your instructor. **Each subsequent week starts on a Monday and ends on a Sunday.**

Dates	Modules	Topics / Readings	Assignments Due
Prior to Semester Start Sep 07 – Sep 11	Module 0	Course Orientation Course Outcomes Bb Functions and Operation Wimba Basics	No assignment is due Review Sample Case Study Presentation Review Sample Project Paper Review Sample Reflective Learning Exercise Review Probability and Statistics Practice Question Bowl
Week of Sep 12 – Sep 18	Module 1	Chapter 1 – Introduction to Operations Management Study/Review Items	Bb Reflective Learning Exercise and Discussion Other assignments Due in one week Do/Perform/Create Items
Week of Sep 19 – Sep 25	Module 2	Chapter 1S – Operational Decision-Making Tools: Decision Analysis Study/Review Items	Assignments Due in one week Do/Perform/Create Items
Week of Sep 26 – Oct 02	Module 3	Chapter 2 – Quality Management and Quality Management Solved Problems Study/Review Items	Bb Case Problem and Discussion Other assignments Due in one week Do/Perform/Create Items
Week of Oct 03 – Oct 09	Module 4	Chapter 3 – Statistical Process Control Study/Review Items	Bb Reflective Learning Exercise and Discussion Other assignments Due in one week Do/Perform/Create Items
Project Paper Must be Approved No Later Than The End of This Week (Oct 03 – Oct 09)			
Week of Oct 10 – Oct 16	Module 5	Chapter 4 – Product Design Exhibits 4.1 and 4.2 Chapter 5 – Service Design Study/Review Items	Bb Case Problem and Discussion Other assignments Due in one week Do/Perform/Create Items
EXAM 1 (Module 1 through Module 5)			
Week of Oct 17 – Oct 23	Module 6	Chapter 6 – Processes and Technology Study/Review Items	Bb Reflective Learning Exercise and Discussion Other assignments Due in one week Do/Perform/Create Items
Week of Oct 24 – Oct 30	Module 7	Chapter 7 – Capacity and Facilities Chapter 7S – Operational Decision-Making Tools: Facility Location Models Study/Review Items	Assignments Due in one week Do/Perform/Create Items
Week of Oct 31 – Nov 06	Module 8	Chapter 10 – Supply Chain Management Strategy and Design Chapter 11 – Global Supply Chain Procurement and Distribution Study/Review Items	Bb Case Problem and Discussion Other assignments Due in one week Do/Perform/Create Items
Week of Nov 07 – Nov 13	Module 9	Chapter 12 – Forecasting Study/Review Items	Bb Reflective Learning Exercise and Discussion Other assignments Due in one week

Dates	Modules	Topics / Readings	Assignments Due
			Do/Perform/Create Items
Week of Nov 14 – Nov 20	Module 10	Chapter 13 - Inventory Management Study/Review Items	Bb Case Problem and Discussion Other assignments Due in one week Do/Perform/Create Items
EXAM 2 (Module 6 through Module 10)			
Week of Nov 21 – Nov 27	Module 11	Chapter 14 – Sales and Operations Planning Study/Review Items	Bb Reflective Learning Exercise and Discussion Other assignments Due in one week Do/Perform/Create Items
Week of Thanksgiving			
Week of Nov 28 – Dec 04	Module 12	Chapter 15 – Resource Planning Study/Review Items	Assignments Due in one week Do/Perform/Create Items
Project Paper Is Due By No Later Than The End of This Week (Nov 28 – Dec 04)			
Week of Dec 05 – Dec 11	Module 13 Module 14	Chapter 16 – Lean Systems Study/Review Items Chapter 17 – Scheduling Study/Review Items	Bb Case Problem and Discussion Other assignments Due in one week Do/Perform/Create Items Bb Reflective Learning Exercise and Discussion Other assignments Due in one week Do/Perform/Create Items
Week of Dec 12 – Dec 18	Final Exams	Course Summary End of Course	All Outstanding Assignments Are Due
EXAM 3 (i.e., Final Exam: Module 11 through Module 14)			

The following chapters are omitted:

Chapter 3 Supplement
Chapter 9
Chapter 14 Supplement

Chapter 8
Chapter 11 Supplement

Chapter 8 Supplement
Chapter 13 Supplement

STUDENT EVALUATION

The course has 4 different assignments with a total score of **62** points. Letter grades are awarded based on the total number of points achieved. 50% of points are deducted for late (up to a week) assignments. After one week, assignments receive zero points. **No exception please.**

The following table shows various assignments and points for the course:

Assignments	Points
Reflective Learning Exercises	18
Case Problems	15
Problems (Problem Set)	21
Project	10
Exam 1	10
Exam 2	12
Exam 3	14
Total Points	100

Class Points	Letter Grade
96 and above	A
90 – 95	A-
87 – 89	B+
83 – 86	B
80 – 82	B-
77 – 79	C+
73 – 76	C
70 – 72	C-
61 – 70	D (Undergrad Only)
60 and below	E

Note: Grades lower than a “B” fall below the LTU graduate standard

EDUCATIONAL GOALS

To provide students with a broad understanding of operations management concepts, theories, applications and the skills necessary for practicing effective operational functions in both manufacturing and service organizations.

STUDENT LEARNING OBJECTIVES/OUTCOMES

- Gain awareness of the strategic planning, leadership skills and operational problems encountered by operations managers.
- Gain knowledge of the functions and activities of an operations manager.
- Know how to plan, develop and evaluate functions and activities that are under the control of a factory or service facility manager.
- Gain a deeper understanding of the dynamics and interactions among the various functions in a manufacturing/service facility (this I call “**systems approach**” to thinking, decision making and planning).
- Be able to recognize, formulate, analyze, and evaluate decisions of operations managers.
- Have the opportunity to develop and improve their presentation and communication skills.

PREREQUISITE SKILLS

Elementary application knowledge of the probability and statistics to the extent that are demonstrated in the presentation material contained in the Module 0.

Modest skill in Microsoft tools such as PowerPoint, Word and Excel. In particular, the ability to utilize Excel for solving problems and Microsoft Equation functions for creating formulas in either Word or Excel, this becomes very handy in presenting the given assignments.

INSTRUCTIONAL METHODS AND COURSE ORGANIZATION

Introduction:

My teaching philosophy is that learning is best done actively, not passively. It is something that **YOU** do, not something that is done to you. For my part, instruction in the course will rely primarily on leading discussion, providing lectures, readings, assist in problem solving, and projects or cases. But the learning that occurs – what you eventually take away from the course – is a function of what you put into

the course. Active involvement through your active participation in the assignments, problem solving, and discussions is essential for you, and your classmates, to get the maximum benefit from this course. My goal is to **challenge** you to learn and exercise **critical thinking** and as such gain as much as you can about operations management.

Critical Thinking: Critical thinking is the art and skill of analyzing and evaluating thinking with a view to improving it. We all are thinking beings; it is our nature to do so. But most of our thinking, left to itself, is biased, prejudiced, distorted, partial, uninformed, conditioned, or down-right mechanistic in the sense that we tend to act as a machine and follow algorithmic (step-by-step or cookbook) instructions. Yet the quality of our decision making in both private and public life and that of what we produce, make, or build depends precisely on the quality of our thought. Shoddy and mechanistic thinking is costly, professionally, monetarily and in quality of problem solving. Excellence in thought, however, must be systematically cultivated. Therefore, as I challenge you with the various assignments, exams, lectures discussions and or problem solving that is not cookbook approach or step-by-step fashion is precisely because I want to help you with this systematic task of creating the skill and art of critical thinking ability. In this era of extreme competitiveness in seeking a decent profession you must be able to stand on your own and be able to lead in problem solving.

Method of Instruction:

This course is entirely an online course and following requirements are essential:

Blackboard Learning Environment – Blackboard at my.ltu.edu contains the syllabus, all assignments, reading materials, detailed PowerPoint lectures (**mainly developed by this instructor**), solved problems with solution details, exercise questions are contained in Question Bowl located in Module 0, links to Web resources, and discussion forums. You will submit all assignments **typed and saved in a separate file using either Microsoft Word or Excel** posted on the Blackboard, and are expected to participate regularly in discussion topics on Case Problems and Reflective Learning Exercises. Please take time to familiarize yourself with the organization of the Blackboard site and various functions of the Blackboard. You will want to check the site frequently for announcements reminding you of new resources and upcoming assignments. **Ensure that you have a current e-mail address on Blackboard;** otherwise you will not be able to receive e-mails from your instructor.

Student/Instructor Conversations – Students keep in touch with the instructor via e-mail messages. Mutual respect and courtesy and civility will be followed in all student/instructor conversations.

Self-Assessments – Pre-and post- self-assessment tools such as the ones that are available on the publisher web site or through periodic reviews of the Question Bowl located in Module 0 will help students measure their entering skills and progress during the course.

Required Reading – Textbook chapters and occasionally solved problems should be carefully reviewed and studied according to the schedule outlined in the syllabus as well as in each module. Chapters' presentations have been prepared in detail and posted in each module online. However, you **must** also study the chapters in the textbook in order to do well on your exams. The detailed chapter presentation may not necessarily cover the entire content of each chapter as is discussed in your textbook. You are responsible for studying both the lecture presentations and the corresponding textbook chapters.

Publisher Web Site – A couple of publisher web sites at <http://www.wiley.com/college/WileyPLUS> and <http://www.wiley.com/college/russell> include instructional materials, PowerPoint slides, case studies, application exercises, and practice quizzes. You are encouraged to make use of these resources as you are directed in the practices. Please ensure that the textbook you purchase from either from the bookstore or online provides you the permission to access these two publisher's web sites (in other words, the textbook contains the publisher's "codes.") You may also directly purchase from the publisher your textbook and the corresponding code for accessing the publisher's web site.

Assignments – list of specific assignments are briefly contained in the syllabus, however, they are defined in detail in each module. Pay attention to the specific assignment numbers and the page numbers where they can be found in the textbook. Please be advised that if you do the wrong assignment you will not get grade devoted to that assignment.

CLASS POLICIES AND EXPECTATIONS

I plan to offer you a valuable learning experience, and expect us to work together to achieve this goal. Please keep in mind that like any other task as we move forward we may encounter issues that we may have not anticipated, in such cases I will do my best to resolve these issues and I expect your friendly and courteous relationship in helping me to cope with these issues. Remember, we are all into this journey together, let's make it an exciting and fun journey.

Here are some general expectations regarding this course:

Each student has a LTU email account. If you wish to use a different email address for this course, please **change your email address in the Blackboard under “Blackboard Tools”, then “Personal Information”** and send an email to me so I can store your address in my email directory.

Readings, discussion forum participation, and written assignments must be completed according to the class schedule and the due dates given both in the syllabus and in each assignment in the corresponding module. If business travel will take you away from regular participation, please clear the dates with me in advance. In this age of electronic revelation, you should have no issue accessing the Bb from anywhere in the world, and as such even if you go away for a business trip or pleasure please comply with the given assignment schedules.

It is essential that all students actively contribute to the course objectives through their experiences and working knowledge. Reflective Learning Exercises are a vehicle to **deliver** your experiences in applying the theories that you learn in the course and **share** your experiences and thoughts with your fellow students and I, the instructor.

All assignments must be submitted on schedule, via Blackboard, and using Microsoft Office compatible software. You will submit all assignments **typed and saved in a separate file using either Microsoft Word or Excel** posted on the Blackboard. Please do not email your assignments and if for any unforeseeable reason you need to submit an assignment via email, contact the instructor in advance. **Late work up to a week will be reduced in value by 50%, and receive zero value after one week lateness.**

Assignments must be completed to an adequate standard and with enough details to obtain a passing grade. Requirements for each assignment are detailed in each module and highlighted in this syllabus.

Be prepared to log into Blackboard at least once each day. Please focus your online correspondence within the appropriate Blackboard discussion forums so that your colleagues (your fellow students and I) can learn from you.

At midterm and at the end of the course, you will be invited to participate in a University evaluation of this course. Your feedback is important to the University, to LTU Online, and to me as an instructor, and I strongly encourage all of you to please participate in the evaluation process and please provide constructive comments. Do not let only a few of you speak for you; you all need to participate in these evaluations; let your voices be heard.

It is also important for you as students to know what to expect from me as your instructor:

- I will be available to you via e-mail, and will reply to your messages between 24 and 48 hours (and occasionally 72 hours, if over a weekend and in case of Internet issues or Bb disruptions).
- I will be available to you for face-to-face appointments if requested and scheduled in advance.
- I will maintain the Blackboard web site with current materials, and will resolve any content-related problems promptly as they are reported to me.

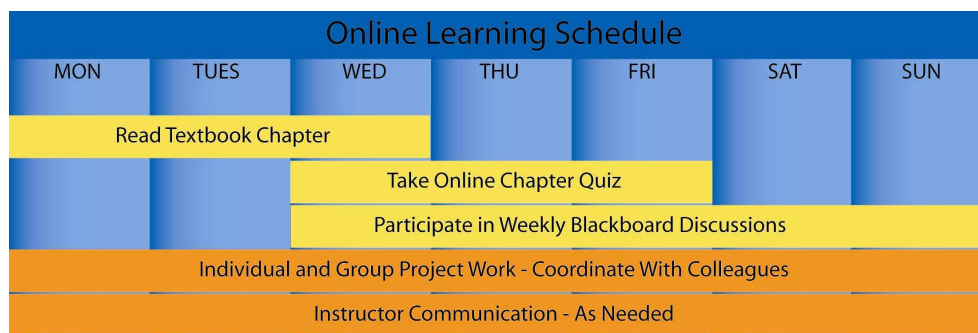
- I will send out a weekly e-mail update to all class members to guide upcoming work and remind you of various assignments due dates.
- I will return all assignments reviewed and graded to you promptly and, if needed, will include individualized comments and suggestions appropriately with each assignment.
- I will hold our personal written or verbal communications in confidence. I will not post any of your individual assignments for viewing by the class without requesting your approval in advance.
- I will treat all members of the class fairly, and will do my best to accommodate individual learning styles and special needs. Please do not hesitate to share with me your personal issues regarding the course, especially if these issues get in the way of your progress and learning.
- If any of these points need clarification, or when special circumstances arise that require my assistance, please contact me so that we can discuss the matter personally and one-on-one.

PRACTICAL GUIDELINES FOR CLASS LOAD EXPECTATIONS

A three-credit course generally requires at least twelve hours per week of time commitment. Here are some practical guidelines to help schedule your time commitments for this online course:

- A 14-week semester (the Summer semester is compressed into 10 weeks) would require at least 168 hours of time commitment to successfully complete all readings, activities, assignments, exams and texts as described in this syllabus; this will amount to about 12 hours per week of time commitment.
- You should reserve at least 6 hours per week to read the required textbook chapters and resources, participate in online discussions, review presentation materials, and work through online materials. This effort will total at least 84 hours over the course of the semester.
- You should organize your remaining time to roughly correspond with the point value of each major assignment. This means that you should plan to spend at least:
 - 5 - 7 hours per week studying the chapters and preparing your chapter assignments;
 - 2 – 3 hours per week working on your semester-long project;
 - 1 – 2 hours per week working on your reflective learning exercises ;
 - 2 – 3 hours per week working on your case study assignments;
 - 2 – 3 hours per week preparing for your exams.

These guidelines may not reflect the actual amount of outside time that you – as a unique individual with your own learning style and background – will need to complete the course requirements. The number of hours each week will vary based on the volume and assignment due dates, so please plan ahead to insure that you schedule your academic, work, personal and family time effectively. The following graphic can be used to guide you in planning your weekly course work to remain on schedule (please note that this is a generic graphic and certain portions may not necessarily apply to your specific course):



ASSIGNMENT DETAILS

Course assignments and evaluation criteria are detailed below. Please review these requirements very carefully. See the section Academic Resources / Assessment Guidelines for information about assessment of written and oral presentations.

Details for all assignments are shown below. Please note that all assignments must be submitted through the Blackboard “Assignments” or “SafeAssign” function as specified. Some assignments, such as Case Problems and Reflective Learning Exercises, are also posted to the Blackboard Discussion Forum for your fellow student comments.

Assignments:

Overview – assignments include “Reflective Learning Exercises”, “Case Problems”, “End of Chapters Problems”, “Project/Term Paper”, and “Three Exams” with a maximum of 100 Points for all. There are a total of 6 reflective learning exercises, 5 case problems, 42 individual end of chapters’ problems (grouped in 17 sets), a project/term paper, and three exams. The due dates for these assignments are specified in the syllabus, and the due dates are generally one week (ending in Sunday at 11:59 PM) after the corresponding module is being scheduled.

Answers to the odd numbered end of chapters’ problems are given at the end of your textbook (pp. 790-797). Table for Normal Curve Areas is given on page 787, Appendix A, of your textbook.

Proposal – The specifics for each assignment is detailed in its own section below.

Deliverables and Evaluation – The deliverables and evaluation criteria for each assignment are given in their own sections as described below.

Reflective Learning Exercises: (18 points)

There are a total of 6 reflective learning exercises that will, in total, earn you 18 points (each individual reflective learning exercise has two parts and will earn you up to 3 points: part 1 earns you up to 2 points for the writing and posting the exercise and part 2 earns you up to 1 point for reviewing and commenting on at least one classmate’s exercise).

Your reflective learning exercise part 1 will be evaluated to a maximum of 2 points for writing it; based on the depth and richness of your writing quality, its linkage to the course content (not repeating what is in the text, don’t do that because it won’t get you any credit), and your overall style and writing quality (grammar, typing errors, etc). Please be careful with using proper English grammar and seriously avoiding typos, this means that you should read and review your writings carefully before their final submissions. As mentioned, the intent here is not to repeat the textbook material rather it is about applying the content to your work or life experiences and presenting it in a good way with a high quality in writing.

Part 2 of the reflective learning exercise relates to your review of reflective learning of at least one of your class-mates which will earn you up to 1 point. In this part, I want you to provide constructive comments and express both the strengths and areas of opportunities for improvement in your class-mates’ reflective learning exercise. Do not limit your reviews to just praising phrases (the so-called mother-hood-apple-pie statements such as “good work,” “nice experience,” etc.): Remember, none of us are perfect and may only see things in our own ways, as such we all need to hear other views and perspectives; that is how we learn and grow, that is what I want to hear from you as you review your class-mates’ reflective learning exercise.

I highly recommend taking notes as you go through the corresponding module that contains a reflective learning exercise and contemplating on the material in question in order to make this exercise easier and richer for you.

The main purpose of this exercise is to relate theory to practice. Below you learn more about this purpose.

What is reflection anyway?

Most people who are involved in education are familiar with the term "**reflection**." In fact, we are all familiar with reflection... every time we look in the mirror. The term "reflection" is derived from the Latin term reflectere - meaning "**to bend back or refold**." A mirror does precisely this; bends back the light, making visible what is apparent to others, but a mystery to us -- namely, what our faces look like. Reflection suggests that attention be turned inward so it can then be turned outward, **to see a familiar thing in a different way**.

In the College of Management, we look to develop processes that allow students to bend the metaphorical light of their experiences back onto their minds - to **make careful considerations about what they learn and how it relates to their personal and professional experiences**.

Have the topics discussed changed your point of view in any way?

Has another student in the class clarified something that was previously misunderstood by you about other companies, countries, or other societies?

Did the coursework inspire you to change your personal or professional goals?

Have you handled or will you handle certain managerial challenges differently now that you have learned from the authors, instructor, researchers, and other students?

Etc.

The act of reflection, therefore, becomes crucial to your education. It serves as the **bridge between experiences and learning**.

A sample reflective learning exercise is provided in Module 0 for your review and reference.

Case Problems: (15 points)

Each student is assigned to 5 case problems. These cases are from your textbook. The student will carefully study the case and analyze it by carefully answering the questions at the end of each case. The student will prepare and post a PowerPoint presentation for the case. This presentation will contain:

- An executive summary which also includes a brief description of the case;
- A process flow or steps of the case; and
- A summary of your recommendations

You will not actually deliver the presentation, but think of it as if you were going to present it to a live audience.

The use of graph and creativity in demonstrating the case is highly recommended. The total grade for this assignment is 15 points of the course grade (3 points per case). Of the 3 points for each case, a maximum of up to 2 points is given to your case preparation and posting it on the Bb on due date; and up to 1 point is given to your review of the same case that is done by at least one of your class-mates. The same comments made earlier regarding the review of your class-mates' reflective learning exercise, will also apply here.

Case Presentation Preparation Guidelines:

1. Assume the length of each case presentation is 10 Minutes (that is, if each slide on average takes 2 minutes to discuss, then you need to prepare about 6 slides, including the title page).
2. Use PowerPoint.
3. Do not crowd your slides by too many words. Instead, you may utilize the “notes” portion of each slide to add narratives.
3. Use graphs and figures that are legible and easy to follow, and font size (use easy to read and legible fonts from a 20 feet distance).
4. Use creativity in presentation content, format and style of presentation.
5. Format of the presentation:
 - a. A title page containing: the name of the case, name of the course, and date.
 - b. Sources of materials and acknowledgement of contributors.
 - c. An executive summary
 - d. The body or the content of presentation: short statement of the case, what the case asked you to answer, your answer and any comments or recommendations you may have.
6. Post your case presentation – submit at the due time.

The main purpose of this exercise is to assess your understanding of the subject matter that you learned from the lecture notes and textbook as you analyze a real life situation or scenario.

A sample case presentation is provided in Module 0 for your review and reference.

Problems: (21 points)

These are problems that are covered at the end of each chapter under the title of “PROBLEMS.” Do not confuse these with the “QUESTIONS” at the end of each chapter. All problems assigned must be answered *typed, complete and concise*.

Remember, doing the wrong problems or only providing the answers without showing how you arrived at the answer will **not** be acceptable and earns “zero” credit for you.

Problems assigned are due one week after assignment date. Your answers to the assignments must be posted by 11:59 PM on Sundays. They will be graded and returned to you through the Bb system with my feedback comments a week after they are collected and if necessary they will be re-reviewed to resolve your questions or concerns.

The total grade for all the problems assigned is 21points.which will be equally apportioned to each individual assignment (in total, there are 42 individual problems; therefore, each problem is worth up to 0.5 point toward your course grade).

No extra work request is accepted for missing assignments or poor performance on the quizzes or the exams. ***Please, no exception.***

The main purpose of this exercise is to assess your understanding of the subject matter, methods, models or formulas that are discussed in the lecture notes and textbook as you analyze and solve a problem.

WARNING: YOU MUST DO THE ASSIGNED PROBLEMS INDIVIDUALLY. SUSPICIOUSLY SIMILAR ASSIGNMENTS WILL BE GRADED AS ZERO AT THE DISCRETION OF THIS INSTRUCTOR.

Project (Term Paper): (10 points, 2 points for your proposal and 8 points for final report)

Each student must write a term paper on the topic of "Business Sustainability". Sustainability is simply defined as "meeting the current needs of the customers without sacrificing the resources of tomorrow." Business sustainability is more than caring for the environment, although preserving the environment and being ecologically conscientious is very critical. However, the scope of business sustainability is more than the environment and this project is aimed at this larger focus as described further below.

The best place to start with your project on this subject is for you to visit the following site:
"The Story of Stuff Project," at <http://www.storyofstuff.com/>

The reason is that in the "Story of the Stuff" business sustainability is viewed in a general sense which requires a total attack on various fronts on various wastes and inefficiencies in our production systems.

At a company level, which is a more restricted environment, sustainability requires, in my mind, consideration of the following four main elements:

1. Environmental impacts
2. Knowing the customer and their needs, but more importantly anticipation customers' *latent needs* (the exploration and identification of latent needs is absolutely necessary for creativity and product innovation)
3. Business creativity and innovation – basic understanding of the concepts
4. Technological advancement – how introduction of new technologies can become both useful and disruptive - hence the term disruptive innovation when it comes to disadvantages of the technology as it impacts business sustainability.

The first element, i.e., environment impacts, is the main focus of most sustainability studies that are captured in textbooks. However, the other three elements and specifically how these four elements are intertwined and interact with each other are often neglected as a whole (i.e., the systems approach to the problem of business sustainability is often disregarded).

Relative to the element 2 and how it relates to the creativity and innovation I want to point out that when Noriaki Kano (you may do a "Google search" on this fellow, his last name is pronounced as Kaanow not kaeno, and his model is called "Kano Model") started his effort to develop his model. The story goes like this: Noriaki Kano introduced the idea of Attractive Quality (Delighters or Exciters) in 1979.

His client was Konica (cameras). In the 1970s Konica had realized that to remain competitive its new camera had to radically differentiate themselves from what was available at the time (this is the concept of ORDER WINNERS as stated in operations research literature, find this term and its definition in your textbook). Yet Konica's sales and research groups reported that customers were asking for only minor modifications to the existing model. Kano's theses was: "Success was in not just listening to what customers were saying," but "in developing a deep understanding of the customer's mind to find out their latent needs and then address these latent needs".

This is critically important as most innovative companies are the ones that exactly do this. That is, they strive to find out about their customers' latent needs. One way to do this is by resorting to what is referred to as "observational research." In which the company's researchers actually work and live with their customers to observe how they interact with the products as they use them and as such realize the design deficiencies in their products due to their lack of understanding of and responding to the latent needs.

Relative to element 3, you need to realize the difference between creativity and innovation and also how innovation is done. Here is a tiny bit of information on that as I have observed through my studies:

Creativity is the thought process by which humans bring new things to the drawing board. It is the process of idea-generations and is distinct from innovation. **Innovation**, on the other hand, is the process of converting preferred ideas into real products.

Ideas are being generated in human beings all the time - the human brain is constantly recalling items of disparate information and sometimes throws them together in new combination. **Idea** is something that's so obvious that after you hear about it, you wonder why you didn't think of it yourself. Encompassing all aspects of a situation and making it simple, and tying up all the loose ends into one neat knot. That knot is called an idea. Idea is an immediately understood representation of something universally known or accepted, but conveyed in a novel, unique, or unexpected way. Idea is new combinations of old elements. Getting an idea is like creating a recipe for a new dish (i.e., a new meal). All one has to do is take some already known ingredients and combine them in a new way. In other words, an idea is a combination, linkage, juxtaposition, synthesis or association of things. Arthur Koestler wrote an entire book, *The Art of Creation*, based on "... the thesis that creative originality does not mean creating or originating a system of ideas out of nothing but rather out of combination of well-established patterns of thought - by a process of cross-fertilization."

I am not sure if there are any books that I can specifically refer to. Instead you should focus on how some of the companies that are innovative such as the Apple, Dell, 3M, Rubbermaid, etc. are approaching this. I strongly believe that all these companies are searching for the latent needs of the customers. One must understand that all designs are deficient and the design deficiencies are only revealed through what is referred to as "Observational Research!" What this means, is that during the application of the product these deficiencies are revealed, as potential customers try to compensate for the design deficiencies. For example, a company that was producing the stands for ironing realized through the observation (i.e., asked its customer to do the ironing as the company researcher observed him/her) that the prospective customer stepped on the ironing board's leg as he/she was ironing. When the customer was asked why he/she was doing that, the response was "to prevent the ironing board from tipping over!" That is, the lack of stability of the ironing stand was a design deficiency that the customer was compensating for it by actually putting his/her foot on the leg of the stand to prevent it from tipping. Here is another example. Why is it that most people, still to this date, buy rubber mats to cover the floor mats of their car? Or, for that matter, why do customers cover the seats of their cars, or why do people cover their sofas in their houses (if you have ever watched some episodes of the discontinued TV comedy series called "Everybody Loves Raymond" you know what I mean)? The answer is simple; people do these to prevent them from getting soiled, simply because they are faced with a design deficiency which means the materials used are NOT dirt or soil resistance! Only the companies that get into this kind of research and use processes or methods that help them to get at the latent needs of the customers (or somehow address the design deficiencies) will be able to come up with innovative design or products! Give you another example. Rubbermaid is a company that makes simple household products such as trash cans, organizers, etc. In one of their observational research in a house they realized the housewife had a terrible time trying to clean the little area that existed between the refrigerator and the walls. In most kitchens there is a closure in which the refrigerator is located and hence leaves narrow areas between the walls and the refrigerator which are hard to sweep or clean. Based on that observation they were able to design a product that can be used to clean that area. This could simply be a special kind of broom that can be used to clean up very tight areas. Moen is another innovative company that produces kitchen faucets that uses observational research to get at the latent needs of their customers and hence design innovative products.

Of course, element 4, the technological advancement needs no further introduction. Most of you are pretty much familiar with technologies and their advantages and disadvantages. Economic growth, in our culture, is inextricably linked with technological growth. Individuals and institutions are mesmerized by the wonders of modern technology and have come to believe that every problem has a technological solution. As such, to deal with a problem is to deal with it by applying or developing some new technology. Wasted energy consumption is countered with nuclear power, lack of political insight in dealing with social or economic problems is compensated for with building more missiles and bombs, and the poisoning of our

ecosystems is remedied by developing special technologies that affect the ecosystems in still unknown ways. The ultimate manifestation of our obsession with advanced technology is the widely entertained fantasy that our current problems can be solved by creating artificial habitats in outer space. Technological growth is not only regarded as the ultimate problem solver but is also seen as determining our life styles, our social organizations, our value systems, and wastefully utilizes our natural resources; all of these are contrary to business sustainability. As multinational corporations intensify their global search for natural resources, cheap labor, and new markets, the environmental disasters (I am sure you still remember the Gulf of Mexico oil spill disaster created by BP) and social tensions created by their obsession with indefinite growth become ever more apparent. One of the dangerous manifestations of multinational growth today is that of corporations. The largest of them have now transcended national boundaries and have become major actors on the global stage. The nature of large corporations is profoundly inhuman. Competition, coercion, and exploitation are essential aspects of their activities, all motivated by the desire for indefinite expansion. Continuing growth is built into the corporate structure. Many of the large corporations are now obsolete institutions that lock up capital, management, and resources but are unable to adapt their functioning to changing needs and sustainability. A well-known example is the automobile industry, which is unable to adjust to the fact that the global limitations of energy and resources will force us to drastically restructure our transportation system, shifting to mass transit and to smaller, more efficient, and more durable cars. Similarly, the utility companies require ever expanding demands for electricity to justify their corporate growth, and have thus embarked on a various campaign for nuclear power, rather than pioneering to small-scale, sustainable, decentralized solar technology which alone can provide the environment conducive to our survival. The excessive energy- and resource-dependence of the big corporations is reflected in the fact that it is capital-intensive rather than labor-intensive. Capital represents a potential for work, extracted past exploitation of natural resources. As these resources diminish (so does business sustainability), capital itself is becoming a very scarce resource (future generation loses big). In spite of this, and because of a narrow notion of productivity, there is strong tendency to substitute capital for labor (hence, business sustainability diminishes further). The business community lobbies incessantly for tax credits for capital investments, many of which reduce employment through automation by means of such highly complex technologies as automated check-out lines in supermarkets, and electronic funds transfer system in banks. Both capital and labor produce wealth, but a capital-intensive economy is also resource- and energy-intensive, and thus highly inflationary and not sustainable. To deal with technological issues from an ecological and sustainability perspective, we will need to revise our basic concepts in business in a drastic way.

As you see, in my mind, sustainability is a multifactor and a complex system. How you can pull all these together is a great challenge, I know, but it is a rewarding challenge. Hopefully my explanation will help you focus your research as you embark on your search for business sustainability rather than reaching for the whole world in which case you will be overwhelmed and in fact you may not be able to find the right solution.

Focus your work around the four elements of business sustainability and pick up some companies that you may want to address in your term paper as example(s).

Contemplate on these and dig out some resources and let me know what you propose regarding business sustainability. Take your time on this. This is a ton of work and I do not expect an immediate answer, but I like to know what you think and as we move forward.

Your term paper research must include at least 3 original sources as the main references in the report. **Reference to the Internet is okay, however, Internet sources are not acceptable as the main references.**

You may use any of the widely accepted citation format such as APA (American Psychology Association) format.

The length of the paper should be about 10 pages (excluding title page, Table of Contents, and List of References), double spaced.

The focus of the paper must be on:

- (1) Define and describe the topic in detail;
- (2) Present an in-depth historical development of the topic (research on the genesis of the topic);
- (3) Identify and present top three companies that are applying the topic and then dwell on benefits or advantages they have gained by using these technologies.

You must obtain the instructor's approval for the topic of your selection by no later than Week of Oct 03 – Oct 09 as also indicated in the Course Schedule. You will earn 2 point of the 10 points devoted to the project's score for submitting a good proposal for approval.

For the approval of your project (term paper) I need the following information (you will post this as an assignment at the scheduled time as in the syllabus):

1. Title and subject of the project.
2. The Outline for the project (i.e., to the best of your estimate what would be the outline of your term paper).
3. A project plan showing all pertinent activities leading to the completion of the project and their timing between now and project due date on the week of Nov. 28 - Dec. 04.

Please note that your progress report would be assessed later based on your proposed plan submitted here.

Remember that you must obtain the instructor's approval for your project proposal by no later than Week of Oct 03– Oct 09 as also indicated in the Course Schedule.

The final term paper is due no later than the Week of Nov 28 – Dec 04 as also indicated in the Course Schedule. Up to the remaining 8 points for the project's score will be given to a perfect final project write up.

NOTE: An outstanding term paper that is *rich in content, creatively formatted, flawlessly presented* and *does not fail to comply with all the given criteria* will receive complete grade (maximum 8 points of the course grade, which includes the proposal and the final project write up).

Term Paper Evaluation Criteria and Grade:

1. Timely and requirement fulfilled proposal submission: **2.0 points**
2. Project Final Report, **8 points** based on the following criteria:
 - 2.1. Format (no typos or typing errors, no grammatical errors, good overall structure – includes table of contents, body of paper as described in term paper section, references, appendix – appendix may include data, charts or graphs or any other relevant materials to the topic); **3 points**
 - 2.2. Content (richness, it delivers a well balanced and clearly, yet concisely, stated message; the use of charts or graphs to illustrate data or ideas, etc.); **2 points**
 - 2.3. Originality (the entire paper must be a true expression of your own thoughts and perspective rather than copying and patching together a bunch of clauses or sentences from various resources). **It's absolutely required that you give credit to the sources of your references throughout the report; 3points**

The main purpose of this exercise for you is to gain a deeper understanding of the concept of business sustainability that is curtail for survival and growth of any business in this era of tough competition and environmental consciousness.

Exams (three exams 36 points)

The written exams consist of both qualitative and quantitative questions formulated as multiple choices with only one correct answer. These exams will be conducted on the Bb and you will be given a time frame within which you can participate; you are allowed to take the exam up to 3 times (i.e., 3 attempts) and the maximum grade of the 3 attempts will be recorded as your exam grade; however, please be advised that the exam time for each attempt will be fixed and the same amount. You will need a scientific calculator to perform calculations on the exams.

First exam contains 20 questions (10 points, that is, 0.5 points for each correct answer).

Second exam contains 24 questions (12 points, that is, 0.5 points for each correct answer).

Third (final) exam contains 28 questions (14 points, that is, 0.5 points for each correct answer).

Note: To maximize your learning and see your mistakes, after each exam is taken by all students, you will be allowed to see the entire exam and correct solutions on Bb.

The main purpose of the exams is to ensure that you have understood what you have learned in the course and find out your strengths and the opportunities for further improvement.

Make-up Exams: Exams may not be missed for the convenience of the student. If it is anticipated that an exam may be missed it is the responsibility of student to notify the instructor prior to the scheduled examination. If in the event an exam is missed due to a University excused absence, the student needs to seek permission from the instructor to take a make-up examination. Demonstration of a University excused absence will be required. Without providing evidence of a University excused absence, a score of zero for the missed exam will be recorded. Make-up examinations will be given at a mutually agreed upon time and location and it will be harder.

Final exam cannot be missed and will be conducted on the date and during the period that the University has scheduled.

SYLLABUS ADDENDA

Please see the LTU Online “Current Students” web site <http://www.ltu.edu/ltuonline/> for comprehensive information about Lawrence Tech’s academic services, library services, student services, and academic integrity standards. The content of this web site is explicitly included as syllabus requirements.

The LTU Online “Current Students” web site also includes grading rubrics used by your instructor to evaluate written assignments, discussion forum participation, and group assignments. Please note that the SafeAssign anti-plagiarism product will be used for written assignments submitted for this course. Please see the instructions included on the LTU Online web site regarding the use of the SafeAssign product.