

Jon M. Huntsman School of Business	
Course Assessment: Cost Management Systems to Support World-Class Operations	
Acctg 6310 Section 1	Spring 2011
Instructor: Rosemary Fullerton	

Section 1: Overview of the Course

Accounting 6310, Cost management systems to support world-class operations, is a graduate class in the Master's of Accounting (MAcc) program. It is required for MAcc students in the audit track. This is the 4th year it has been taught and class size ranges from 15 – 25 students. The class is designed to be a specialized advanced management accounting class. The purpose of the class is to expose students to the principles of lean and the internal accounting system that supports a lean environment. A secondary purpose is to expose students to the strengths and weaknesses of various internal accounting systems that deviate from traditional cost accounting.

Section 1.1 Huntsman School Vision

Huntsman Pillar	Emphasis	Discussion
Ethical Leadership	Low	Some ethical situations are interspersed in class discussions about the responsibility of the accounting in providing relevant information.
Global Vision	Low	The class material applies to organizations world-wide, but there is minimal discussion about unique international settings. We do discuss the difference in cultures for accepting some of the principles of lean.
Entrepreneurship	Medium	Understanding how to set up and maintain efficient and effective processes and provide the appropriate information for entrepreneurial activities is critical. The information discussed in this course would aid in entrepreneurial opportunities.
Analytical Rigor	Medium	Students step out of their comfort zone in this class and learn more about <i>why</i> we need accounting information and what is appropriate for decision making, rather than just how to crunch numbers. The class tries to help them understand information from the management side, and not just the accountant's perspective.

Section 1.2 Departmental or Program Learning Goals

Learning Goal	Emphasis	Discussion
Professional Knowledge: Analyze business processes and how to make improvements in those processes.	High	The emphasis in this class is to understand how business processes affect the culture and success of a business. Thus, as accountants, we should be aware of how to effectively analyze and continuously improve all aspects of business. Our measurement system should support this improvement through appropriate performance measures.
Professional Knowledge: Understand their role as an internal accountant	Medium	As internal accountants, it is critical for us to provide the most relevant information possible in the most efficient manner to aid management in decision making. To achieve this objective, we must have a full understanding of the business and of the information needs of managers. We have to move away from our "number-crunching ivory tower" mentality.
Professional Skills: Be effective communicators--both oral and written.	High	Our main role as accountants is to be communicators of information. Thus, we need strong communication skills. In this class, the students are given several opportunities to hone their communication skills with oral presentations and written reports.
Professional skills: Develop stronger problem solving and critical thinking skills. Be able to think "outside of the box" to improve processes.	High	Students are asked to do two significant projects that require creativity and problem-solving skills. One is as a group project that helps an entity make significant process improvements. The other one is an improvement project determined by an external company (Autoliv) asking for solutions to an identified problem.
Professional skills: Ability to work productively as a member of a team	High	Many of the activities that are done in this class will be prepared in groups. Thus, it is critical that the students learn how to work together effectively. There is considerable discussion on team effectiveness.
Professional values and attitudes: An appreciation for the need to be continually learning and improving	Medium	Lean is all about continuous improvement. We can never be content with the status quo. In order to continuously improve, one has to be continually stretching their knowledge base.

Section 2: Learning Objectives

My main learning objectives are shown below with the specific knowledge and skills I want the students to achieve.

Learning Objectives
<p>I. Students will develop an understanding of the concepts underlying the lean philosophy</p> <ul style="list-style-type: none"> • Recognize lean tools • Identify the five major concepts of the lean philosophy • Understand the seven wastes • Identify process waste

<ul style="list-style-type: none"> • Apply lean is a system-wide strategy that becomes part of the culture • Recognize the importance of lean in support areas such as accounting
<p>2. Students will experience hands-on lean tools</p> <ul style="list-style-type: none"> • Know how to prepare A3's • Know how to prepare value stream maps • Participate in Kaizens • Prepare a personal 5S project • Participate in lean simulations
<p>3. Students will develop an understanding of the types of accounting information that are relevant and necessary for decision making in a lean environment</p> <ul style="list-style-type: none"> • Understand the motivations behind variance analysis • Understand the "accuracy" of a standard costing system and where it may be most appropriate • Understand why a standard costing system may be inappropriate in a lean manufacturing environment • Understand the effects of inventory changes on the P&L statement • Understand what performance improvements are critical and should be tracked in a lean environment
<p>4. Students will gain an understanding of the meaning and relevance of lean accounting</p> <ul style="list-style-type: none"> • Understand the difference between lean accounting and accounting for lean • Know the primary focus of value stream costing • Understand how lean accounting is supportive of a lean environment • Know the differences between a traditional P&L and a "Plain English" P&L • Know the sections of a box score and key performance measures for each section • Understand the concept of features and characteristics costing • Know how to make outsourcing, make/buy, or special order decisions using value stream costing
<p>5. Students will learn how to evaluate and improve business processes</p> <ul style="list-style-type: none"> • Recognize process waste • Identify value added and non-value added activities • Determine creative ways to eliminate non-value added activities. • Determine how to record savings from waste elimination
<p>6. Students will gain a practical understanding of lean applications and lean thinking</p> <ul style="list-style-type: none"> • Participate in simulations • Participate in plant tours • Listen to relevant guest speakers • Watch educational videos
<p>7. Students will have an exposure to various contemporary internal accounting methods used to aid in decision making.</p> <ul style="list-style-type: none"> • Discuss Tom Johnson's theories on the irrelevance of cost accounting • Discuss ABC and time-driven ABC • Discuss throughput accounting and theory of constraints • Discuss the balanced scorecard • Discuss target costing
<p>8. Students will improve their leadership and team-building skills.</p> <ul style="list-style-type: none"> • Participate in various team in-class activities • Prepare a group project involving process improvement • Prepare a team solution to an identified Autoliv problem
<p>9. Students will improve their communication skills</p> <ul style="list-style-type: none"> • Make a group oral presentation for group project

- Make a group oral presentation for Autoliv project
- Make an oral presentation of 5S project
- Prepare a written report for group project
- Prepare a written final essay exam

Section 3: Learning Activities

Learning activities involve five areas:

1. Reading material and assigned problems or discussion questions
2. Class discussions
3. Interactive activities.
4. Case studies
5. Group and individual projects

Reading material:

- Students are assigned to read new material before each class and usually prepare related homework problems or discussion questions. The assigned material is indicated on the syllabus. Detailed information on the reading material and the assignments is kept on an updated calendar in Blackboard. Discussion questions are assigned for each reading assignment, with usually one or two of them required to be turned in.
- PowerPoint slides are available on Blackboard to support most of the reading material. These are all original slides that I have prepared on the subject material and are available to the students on Blackboard. Shorter versions of the slides are used sometimes in class to support some of the class discussions.

Class discussions:

- Participation in class discussions is a significant part of the students' grades. This is one reason for assigning discussion questions. Students are expected to have read the material and taken notes related to the discussion questions so they can be effective participants. I generally do not randomly call on people—this is something I should do more often. I do try to make sure that nobody dominates the discussions and encourage all to participate without forcing the issue. The participation grade is a combination of the students' grades and my grades. I also have them turn in a grade for their preparedness for the day, which affects their participation grade. I try to grade on quality, rather than quantity of participation. There is a carefully crafted grading explanation for participation that is attached to the syllabus. I give my own participation points immediately following each class. The students are given a participation form to track their own grades. I am debating whether or not to continue to have them do their own participation grading.
- Since I have not given exams in this class, it is critical that students are motivated to do the reading. The assigned problems, discussion questions, and participation grades are meant to make sure that students are current in their reading. However, I do give some

“surprise” reading quizzes (taken from the assigned questions) to keep students motivated. I plan to do this more often in the future, since the results on the quizzes this semester were disappointing.

Interactive activities:

- We do several in-class interactive activities in this class. I believe this is what makes this class unique and also helps students better understand the principles of lean thinking. The activities are used to support concepts that we have discussed in class. Most of these are done as group activities. Examples include:
 - Penny simulation to introduce students to one-piece flow
 - Jax Tax case using value stream maps for current and future states
 - Performance measurement alignment exercise
- We take a full class period to do an interactive lean manufacturing simulation building toy robots with Legos. This simulation was developed by me and this was the second time through the simulation. To me, this is one of the highlights of the class for teaching the benefits of lean processes. The students were very positive in their comments, but I also think the simulation felt a little disorganized in the beginning. I had changed the first round significantly—and we probably did not have adequate time to include it and change from departments to cells. The time constraint should change when the class is held for a longer period of time as a once-a-week evening course.
- We had two separate plant tours in the class. One was at Pepperidge Farms in Richmond, UT, and the other one was at Autoliv in Ogden, UT. The students were taken on a tour of the plants by the controllers at each facility. Then there was a question-and-answer period where each controller talked about his/her accounting systems. Pepperidge Farms uses a traditional standard costing system and Autoliv uses a lean accounting system.
- We had two guest speakers come from Lifeline Products in Ogden, UT. One was the COO, Brent Allen, and the other was a senior cost accountant (a USU alumnus), Jordan Crow. Lifetime is implementing lean and talked about the problems with their traditional accounting system in a lean environment and the challenges of changing to a lean accounting system. It was a very interesting discussion, and I think the students learned a lot from them. Brent suggested he would enjoy providing a plant tour to the students, so I would like to see what I arrange in the future.
- Towards the end of the class, we have a debate that is judged by an external graduate MAcc student. There are three concepts debated. One is on new reading material written by Dr. Tom Johnson about the obsolescence of management accountants. Another group defends lean accounting and the last group defends standard costing. This activity is meant to be a summary of the lean accounting concepts in a fun setting. The students are assigned to their debate subject prior to the class and evaluated on the validity of their presentations.

Case Studies:

- The students were assigned three case studies—two were related to lean accounting and one was on the balanced scorecard.

- The first case study was focused on preparing a value stream costing statement. This was an award-winning IMA case on lean accounting. We go over value stream costing statements in class before the case study, but I plan to spend more time on discussing them in the future to make this case study easier. This is a critical concept for the class.
- The first case study was a “warm-up” for the final case study, which is a complex four-piece case where a change in strategy is evaluated using lean accounting concepts and performance measures found on a Box Score. Also, students must do inventory valuation using lean accounting. It is a good summary case for the class. The first two parts of the case are prepared in class with partners and the last two parts of the case are prepared individually out of class. The in-class portion was pushed for time, which can be accommodated easier in the new evening format. Although the students are asked to carefully read through the case before class, they are not given the assignments. In the future, I think I will give them more expectations about what the requirements for the case will be. This should facilitate the in-class portion. This case was originally developed around strategic decision-making with Cessna jets. It was used to teach Textron executives attending Wharton executive training about lean accounting. The case was written by Robin Cooper, a well-known former Harvard professor. I acted as the main editor for the case and filled in for him in presenting the case for the first time at Wharton. Textron ultimately would not give him permission to print the case because of proprietary information, although I was allowed to use it in my class. Cooper changed the case to a locomotive this year, and I edited the new version for him. This was the case used in class this semester. To my knowledge, these are the only two lean accounting case studies available.
- The last case assigned was related to Coors and its use of the balanced scorecard. I used this to expose the students to additional management accounting concepts that are effective in world-class companies. This was the first time I had used this case.

Group and individual projects:

- The most important learning activity that we do in the class, in my opinion, is the group process improvement project. It is worth about 20% of the student’s grade. The students are assigned to groups and given a process improvement project. Some of these are campus projects and some are private companies. I try to find projects preferably in accounting, but sometimes in administrative areas (outside of manufacturing). This semester two campus projects and one external company project were assigned. The external companies are often more interesting, but more challenging to coordinate. I talked to the potential “clients” before the semester and had them identify a process improvement that the students could participate in. The students are then asked to use the lean tools taught in class to work with their clients and make suggestions for appropriate and possible process improvements. The students give an oral presentation and provide a written report to me and to their clients. In addition, I ask for feedback from the clients about the students’ performance; the feedback is part of the group’s grade.

- Another group project that has been added to the course is a Kaizen project defined and graded by Autoliv. Last year, Staci Gunnell, controller at Autoliv in Brigham City, suggested that we ask the students to help with a process improvement for their accounting department. I thought it was a great idea, but it was added to the course late and required some manipulations to achieve it and keep the workload reasonable. This semester, it was built more reasonably into the course. The students were assigned to different, smaller groups and made an oral presentation of their accounting improvement suggestions to Autoliv (this year it was Staci and one of her cost accountants), who graded the project and chose a winner. The winning group received a gift from Autoliv. In addition, this year the winning team leader was asked to do a two-week internship to implement the team's suggestion.
- A smaller assigned project is the 5S individual project where students must choose a personal improvement project and use 5S tools. They present before and after pictures in an oral presentation and also do a short write up on what they learned and experienced from their project. The class chooses a "winning" project. That person is given a gift certificate.

Section 4: Assessing Student Learning

Section 4.1 General Assessment Overview

This is admittedly a difficult area for me in this class. The class is meant to be a hands-on, interactive course with considerable group work. It does not lend itself very well to exams, and much of the grading is subjective, as opposed to the objectivity of most accounting classes. These aspects make it a challenge to adequately assign discriminate grades. I have tweaked my assessment each semester and tried to make it more objective and individually oriented, but I can still do more here. I was generally a little tougher and more discriminating in my participation grading and report grading this semester. I have tried a new approach to participation grading each time through the class to try to achieve a more fair result, since it represents about 20% of the student's grade. The grading still needs some adjustment. I am open to suggestions and often talk to students and other professors about alternative ways to grade this type of course.

Section 4.2 Detailed Assessment

See column 2 of Table 1 for specific assessment activities and performance results for each of my learning objectives.

Section 4.3 External Validation

It is difficult to know whether or not I am teaching the "right" things in this course, since there are so few of these types of accounting classes taught in the country. Those professional people I

know who are trying to promote a better reporting system, especially for manufacturing environments, are very impressed with the fact that we have a course at USU that focuses on lean accounting. I have included a 2007 quote from Orry Fiume, former Wiremold CFO that encourages more proactive academic involvement.

If we have any hope of helping organizations understand true lean management, our universities need to be on the forefront of making this happen. Instead, a few enlightened individuals within the academic network make some noise, and because they have tenure are allowed to introduce some lean material into their courses, but on the whole nothing changes. Some of the academics I know that are trying to change things within their organizations feel like Don Quixote.

Interestingly, there are two CPE courses and one panel discussion on Lean Accounting at the upcoming AAA annual meeting. I have had several people contact me about the materials I use in class. I have also collected materials and syllabi from the few people that I know who teach a course in lean accounting. However, the information is all basically ad hoc—individual efforts currently. The CPA exam does indicate that traditional accounting has some issues, and the exam has added lean thinking and elements of lean accounting to its tested topics.

The best external validation I have is from two controllers who have visited the class and participated in our plant tours and class activities: Staci Gunnell of Autoliv and Sandi Martinson of Barnes Aerospace. Both work for lean manufacturing plants and both are trying to implement lean accounting. They are always very excited about and supportive of what we are doing in this class. Also, I invited the Department Head to two of the class activities (the Lego simulation and group project presentations) for observation and feedback. I have had former students tell me that this class gave them more practical information than any graduate class they took. Also, one of my students working for the Big Four firm offered to come and visit my class to let students know how much these improvement processes are needed in external audits. I plan on inviting her to my class next semester.

Section 5: Incremental Contribution and Continuous Improvement

This section documents ways that I am making a contribution to the class and striving for continuous improvement. I leave an anonymous suggestion box open throughout the semester for students to provide feedback. I remind them of this option several times. Although I do not get much activity there, the suggestions I have received have generally been helpful, and I have tried to implement them either in the current or future semesters.

Section 5.1 Incremental Contribution

I have little external material for this class that I can use, so the majority of the material is my personal contributions. I do have two books that the students read, along with other supplemental material. But these are not textbooks, and I develop all of the supporting material.

- I arrange plant tours and guest speakers for the class
- I find process improvement projects for groups to work on as their group project
- Some of my supplemental material comes from the book that I co-authored with Jerry Solomon.
- The class discussions are generated from the knowledge I have gained about lean and lean accounting through my association with the Shingo Prize, my friendship with lean accounting leaders, my participation with the lean accounting “thought leaders” at the Lean Accounting Summit, my presentations on lean accounting around the country, my sabbatical experiences, and my empirical research in this area.
- I developed a lean Lego simulation and have implemented lean accounting aspects with the simulation. I have created a P&L and Box Score that supports the simulation.
- I have worked with the controller of Autoliv, Staci Gunnell, to develop class projects that involve process improvement Kaizens for Autoliv. I am writing a case study with Staci and a former student related to the most recent student Autoliv project.
- I have developed all of my own Power Point slides, which are used occasionally in class discussions and are available to the students on Blackboard.
- I have developed all of my own discussion questions and homework problems.
- I have created several in-class activities that are used to illustrate in a practical manner the concepts that we study.
- I use a case study that was developed by Robin Cooper, a well-known former Harvard professor of management accounting. I have acted as an editor for the case, which started out as a case study related to lean changes and lean accounting for Cessna jets. The case was used to train Textron executives at a Wharton educational seminar. I substituted for Dr. Cooper in presenting that case at Wharton. Textron refused to give permission to release the case because of proprietary information, but I was given permission to use it in my classroom. Dr. Cooper re-wrote the complex, 4-part case this year, so he could eventually release it publically. He again asked for my assistance in the editing of the case that now has the manufacturing of a locomotive, rather than the construction of a jet airplane as its focus. I again was given exclusive permission to use it in the classroom. There is only one other known case study on lean accounting—which I use as a warm-up for this case. The locomotive case is used as a “capstone” for the course.
- I have unusual access to e-mails that were exchanged with lean accounting experts and Dr. Tom Johnson, who co-authored the seminal management accounting book, *Relevance Lost*. He is a highly recognized former Harvard management accounting professor, who now contends that management accounting is obsolete. I have the students read some of his articles, the e-mail exchanges, and then participate in a three-way debate on

traditional accounting, lean accounting, and Dr. Johnson's "living system" philosophy. I have an external student monitor and judge the winner of the debate. It has been a fun exercise for the students.

- I have attended and presented at the Lean Accounting Summit and the Lean Educator's Conference. This builds my knowledge in this area, provides a great network with both practitioners and academics, and has given me some interesting teaching ideas.

Section 5.2 Changes in Course Due to Past Assessment

I am continually looking for ways to improve this course. I always try to talk to former students to see what improvements they would suggest. I also have a "report out" at the end of the class to get suggestions from the students of what they liked and what they didn't. Of course, the student evaluations also guide some of my changes. Some of the specific changes that were made this semester include the following:

- I had to make several changes to the syllabus during prior semesters trying to find the right mix of material and class time required for topics and in-class activities. This semester, I only made a couple of minor changes to the syllabus.
- I had the students read an academic case study about the F-22 last semester. I thought it was really interesting, but the students thought it was too laborious and difficult to read. I decided to drop this assigned reading, especially since it was focused more on lean than on lean accounting.
- I originally had the students read a short business novel on lean thinking. I found out that this was redundant information for some of the students, so I dropped it from the list and lessened the amount of coverage on lean principles. I have the book available for students that would like to read it to get a better background on lean. I have had a few take me up on that offer. I replaced that book with the business novel on lean accounting, *Who's Counting*. Most of the students had a positive response to this book.
- I previously had a team workbook prepared to discuss some of the critical aspects of teamwork. I also asked the students to fill in several team-related forms for their group project. The students felt like they had worked enough in teams that this was non-value-added activity, and so I dropped several of the forms, and just have a brief discussion about teamwork. A shortened version of the workbook is available on Blackboard for students' reference.
- This was the second time through the lean simulation I created. I decided to try to add a first round with departments and then move to cells. However, the lessons to be learned from this addition was somewhat nullified, because we had to move too quickly to cells and it made the simulation seem more disorganized. I think there is value to having

departments first, and I should be able to make this more effective with a longer time period available. Also, I added a box score tied to the simulation, but because of time constraints, we had to go over it in class—and this was a week after we had worked through the simulation, so it was not as meaningful. I plan on having this part of the simulation with the additional time available—which will make a stronger tie between lean process improvements and lean accounting

- The students have complained about busy work in the class. The first time through, this was definitely a valid complaint. I had students turn in answers to discussion questions on every reading assignment to motivate them to read the material. The questions were mainly reading questions. I have reduced these assignments each semester and tried to replace them with fewer questions and more conceptual questions. I can still do better with the latter. I replaced some of the assigned questions with problems this semester. I would like to increase these where it is appropriate for the material. The best improvement I made was to give surprise reading quizzes related to the discussion questions. I only did this twice in this semester, and the quizzes didn't count for a lot of points. However, I can see that this is an effective method for motivating students to do the reading without requiring "busy work." I will use this more often in the future.
- Previously I had assigned the students to their debate group in class on the day of the debate. I also was the monitor and judge for the debate in the past. Then I tried to get just two external students to monitor and judge the debate. This semester I had one external student monitor and judge the debate—but I also helped monitor it, which worked out much better. Further, I pre-assigned the groups, so the students could study their area and be more prepared.
- Students have indicated they like case studies and would like broader exposure to management accounting techniques. I added a new case study to the class related to the balanced scorecard. I am not sure I will use this particular case study again, but if I don't, I will substitute another case study that focuses on something supportive or lean, but is related to a different management accounting concept than lean accounting.
- I had some students ask for better clarification of the expectations of the group project. I rewrote the group project. I went to the first client meeting with each team this semester, so I could give them better feedback. I also tried to better explain the major lean tools that students needed to use in their process improvement projects. For example, value stream mapping is a critical concept for the group projects and the Autoliv project. I felt like I wasn't giving adequate time in the classroom to the subject. I found a Shingo-prize-winning interactive video on value stream mapping that we used this semester. I believe that it was a very helpful tool in learning how to create value stream maps.
- I take notes after each class session and write down what aspects of the class were positive and what needed to be improved. Then, I try to make those improvements for the next semester.

- The students have complained about work overload in the class. I had a research paper assigned for the “final exam.” When the Autoliv project was added to the class, I agreed with the students that there were probably too many major projects. I felt the Autoliv project was too valuable to drop, so I changed the final exam. It is now a written essay exam that is given on the last day of class and is due on the day of the final exam. I emphasize that this is not just a thought piece, but must be supported with some external references, so in effect it becomes a mini-research paper. It is graded on both content and writing quality. I believe it accomplishes many of the same objectives of the research paper, without it representing a major project.

Section 5.3 Student Evaluations

I was really taken aback by my student evaluations for this course this semester. They are significantly lower than I have received in the previous three semesters of teaching this class. I am still at a loss to understand exactly why, since from my perception, the class was more organized and refined than it has been in the past. I recognize many improvements that still need to be made, and I believe that some of the student comments are valid. I hope that some are perceptions that I can change through minor adjustments and clarifications. I did feel more resistance by the students this semester than I have in the past in general for the subject area. The main area of improvement in the future is to help students see more relevance in the class to their future careers. I also had a couple of students suggest they would like to see more rigor in the class. That is a critical statement that I need to address. Interestingly, I have not had that comment previously, and I do not think that I have eased the rigor this semester. The focus of this class is continuous improvement, so if I do not do that I have failed as an instructor in accomplishing my overall objective. I do think that some of the “organizational” problems that we experienced in the class this semester will be solved with the longer, once-a-week evening class. But that will also create some new scheduling issues that I will need to carefully address. Below are some of the specific improvements I intend to concentrate on and be held accountable for:

- One of the lowest evaluation scores was for clarification of class objectives. I need to make sure the students understand the expectations up front and then reiterate how these objectives are being accomplished through the assignments throughout the course.
- Another evaluation issue is on course organization. I am going to go through my syllabus assignment schedule carefully to make sure that each topic is covered in a logical and rational manner. I currently have an outline for each class discussion. However, we sometimes get side-tracked in our discussions and don't get the material covered that I

planned on. I will more conscientiously guide the discussions so they go in the direction I intended for the day.

- I need to more effectively motivate the students to read the material, since that is how they learn and meaningfully participate. I am going to give more short “surprise” reading quizzes and have them count for more points so students will come prepared to class. Related to this I will assign fewer discussion questions to be turned in (reducing the so-called “busy work.”)
- I am going to work on having more challenging and relevant problems and homework questions—and then grade them carefully. I think some of the “rigor” criticism is that the grading was pretty easy on the case studies in particular. I will expect more from the students, but will also try to prepare them better and make sure that assignment expectations are clear.
- One of the criticisms was that communication on expectations for readings and assignments was not always clear. This is somewhat of a mystery to me, since there were several ways I communicated the upcoming assignments. The readings were in the syllabus, which was followed at least 90% of the time. Any changes were announced more than a week in advance. I also announced the readings and assignments for the next two upcoming classes at the beginning of every class. A calendar detailing the assignments was kept up to date on Blackboard. I consistently used this throughout the class. It was always more than a week current—and for major assignments, was current for the semester. In addition, I handed most of the assignments out in class with at least a week’s advance that detailed the expectations of the assignment. In talking with a student after the end of the semester, he suggested that I emphasize the Blackboard calendar more at the first of the class so students get used to using it. Also, he suggested that I reiterate the assignment for the next class period at the END of the class. This is an excellent suggestion. Too often, I am rushed at the end of the class. I should take the last two or three minutes to summarize the current class and the expectations for the next class. I will do this in the future.

Student Evaluations Summary

General evaluation	Overall quality of the course = 4.2 Instructor's effectiveness = 4.6
Information about the course	<p>The highest score here was in fairness of grading (5.0). All of the other scores were mid 4 range—higher than the overall score, except for clarity of course objectives (4.2) and helpfulness of texts/readings (4.1). I believe that my objectives were stated quite clearly on my syllabus, but I only went over them briefly in class, because I assumed the students could read them. However, I can do a better job of explaining what my expectations are of the course. Interestingly, this has always been greater than 5.0 in my previous 3 classes. As to the texts—there is very limited material available on Lean Accounting. The book that we use is the only book that gets into the nuts and bolts of lean accounting. I agree that it has weaknesses, but it is the only one available at the time, so we have to work around its weaknesses. However, I probably can use it more effectively, so the students will get better value from it.</p>
Information about instruction	<p>All of the instruction items were greater than the overall score except for course organization (4.3). The scores in my previous 3 classes for course organization were much stronger. This is somewhat surprising, since I felt that I was more organized than I have ever been in the class—lots fewer changes to the syllabus. I do try new activities and learning experiences each time through the class—so maybe there were more of these that weren't as effective. Sometimes we were pressed for time to adequately wrap up. Most of the scores in this area were greater than 5.0.</p>
Comments from students: aspects that were especially good	<ul style="list-style-type: none"> • Several students commented on how much they enjoyed the plant tours and guest speakers • There were several comments about how they enjoyed the in-class discussions and debates of issues and the hands-on interactive activities. • The simulations were also discussed as a positive. • The instructor's passion and enthusiasm for and knowledge of the subject material was noted on several evaluations
Comment from students: changes that could be made for improvement	<ul style="list-style-type: none"> • A few commented on too much take-home, busy work. (I think I stimulated that comment, unfortunately) • What is the relevance to audit work; should the class be required for auditors; too much of a management class • Less emphasis on lean; more about other costing areas • Need to push students harder with assignments • Didn't like books • Work on organization and structure—better communicate expectations

Section 5.4 Ideas for Future Improvement

Although I had a sense during this semester that this particular set of students were not as motivated as I had experienced in the past, I still was surprised by the student evaluations. Due to prior feedback and adjustments I had made in the class, I believed that it was a better class than previously, yet the evaluations were in the other direction. I preach in the class continuous improvement in all aspects of your life—especially in the workforce, so if I do not adhere to that focus, I am hypocritical. I thought that I did. I had fewer changes to the syllabus this semester; I eliminated some of the readings and activities that were not effective in prior semesters; I kept an updated calendar on Blackboard detailing all the assignments; at the request of the students, I made fewer handouts and had all of the reading material available on Blackboard; I scheduled the Autoliv project into the class so it was not an add-on. I thought all of those were positive responses to prior student suggestions.

I was very pleased with the plant tours we went on, the guest speakers that came to talk to us, and the Autoliv “real-world” project that was assigned to the students. I also felt the group projects were very beneficial for the students—and probably two of their improvements suggestions will be implemented by their clients.

The student group projects were spread out over two months. This was partially due to scheduling and partially due to trying to allow the students adequate time. The students and their “clients” were very excited when the projects were initially assigned. However, the students seemed to put the project on hold after that until the last two weeks before it was due—even though I prodded them to turn in various assignments related to the project earlier. The project was somewhat interrupted by the spring break. Two of the clients felt that the students were not very responsive and did not interact enough directly with them. I think if I shorten the time period for the group project, this may solve some of these issues. The group project and the Autoliv project also felt too close together, so giving a shorter time period to the group project will help with that as well.

Some of the additions I made to the class included two case studies—one was a subject area that supports world-class firms, but is not specifically lean related. This was in response during the class to a request for more case studies and material outside of lean. I had a new comprehensive case study that was given to me to use for my class exclusively by Robin Cooper. I developed a lean Lego simulation for the class last year—and changed one of the rounds of the simulation this year. This pressed us for time, and was a little more confusing than I had wanted. I will adjust it again next semester—and I will have more time in class. The textbook, *Practical Lean*

Accounting, now has questions and problems that support the material. I adapted some of the problems and assigned them as homework. These were only partially effective. I need to give more background to the problems, since the students seemed to have forgotten most of their previous cost accounting. I also graded these fairly liberally. I plan to expect more from the students in their performance in the future.

The format for the class next semester will be different—having it once a week in the evening. Sometimes I was pressed for time with the in-class activities we did. I like to have group report-outs on activity results, so that teams can evaluate and compare different team approaches. For some of the activities (the Jax Tax case, 5 whys exercise, and alignment exercise), we didn't have adequate time to discuss each team's results. The evening class will allow for better time allotments to these exercises—as well as the simulation. The simulation will particularly benefit from an extended period of time. I can now tie more lean accounting to the simulation. I have developed a box score and P&L that we can prepare with the simulation that should help the students better understand how lean accounting supports lean processes. Also, we will have time to talk about the effects of the changes in the different rounds of the simulation.

I have reduced the “busy work” each semester, but the students still complain about it. The “busy work” includes answers to discussion questions that the students must turn in related to the assigned reading. I use these to motivate the students to read the material. I mixed in a few “surprise” reading quizzes this semester where the students could use their notes. The quizzes were taken directly from the discussion questions. I found out that some of the students were not reading adequately. I am going to use more of the quizzes next semester and have the students hand in fewer formal answers to the questions. I will also have the quizzes weighted more heavily than I did this semester. I plan on changing the questions that I do have the students turn in to more thought questions than reading questions. I had a mixture of those in past semesters, but if I just have the students turn in only thought (conceptual) questions, it should not feel like busy work. These are often more difficult to grade, because they are more subjective—but they also stretch the students more.

I need to make sure the students see the relevance of the class to their future careers. There is plenty of evidence that lean thinking is affecting all sorts of industries and that management accountants need to be involved with the movement. I just learned that the Shingo Prize has been working with one of the Big Four accounting firms to help them with their processes. A former student in my class who is now working as an auditor for Ernst & Young told me that she recognizes how lean principles could greatly improve the auditing profession. She has indicated she will come and speak to my class. I plan on bringing more evidence into the classroom of the relevance of this material.

Table 1: Specific Learning and Assessment Activities

Learning Objective 1: Students will develop an understanding of the concepts underlying the lean philosophy

Specific Learning Activities	Specific Assessment and Performance
<ul style="list-style-type: none"> • Read Chapter 1 from <i>Accounting for World-Class Operations</i> (various examples of successful lean implementations by world-class companies) • Read <i>Economist</i> article on the Toyota Production System • Read Chapter 15 in <i>Practical Lean Accounting (PLA)</i> (The Lean Enterprise) • Read the Statement on Management Accounting: Lean Enterprise Fundamentals • Read the Lean Dentist article • Read Jake Brake article (lean applications in accounting department at Jake Brake) • View Toast Kaizen video 	<p><u>Assessment Methods</u></p> <ul style="list-style-type: none"> • Class Discussions—participation grades • Homework assignments • “Surprise” reading quizzes • Question set on SMA 1 <p><u>Performance</u></p> <ul style="list-style-type: none"> • The class average was high on participation—98% of total points possible. Part of this was attendance—and attendance scores were perfect. Also, part of score is self evaluation. • The students did very well on their homework assignments with a final average score of 98%. It is expected for them to do well. They only need to average 90% of the total points possible to get a grade of 100%. • The surprise quiz given on the reading for Jake Brake had a very low average score of 50%. A few of the students indicated they had not read the material, and thus received a zero. • Question set scores for SMA 1 > 90% <p><u>Comments</u></p> <ul style="list-style-type: none"> • Need to call on students more frequently, rather than let them mostly volunteer • Lower the weight of self-evaluation in participation scores. Some students are too generous. The participation scores were higher for some students than they should have been. I need to re-evaluate the scoring here. • Students in general did an excellent job with assignment questions, but I should make questions that probe deeper. Most of questions easy to answer if read the material. • The quiz scores show that many were unprepared—not adequately doing the reading. I plan on reducing the assigned questions and increasing the number of “surprise” quizzes to motivate students to read material more thoroughly.

Learning Objective 2: Students will experience hands-on lean tools

Specific Learning Activities	Specific Assessment and Performance
<ul style="list-style-type: none"> • Penny Exercise • Toast value stream mapping video & class exercise • Jax Tax value stream mapping exercise • Ronny Robot simulation • 5S assignment • Kaizen assignment 	<p><u>Assessment Methods</u></p> <ul style="list-style-type: none"> • The Penny Exercise, Jax Tax case, and Toast value stream mapping video were in-class group activities. The students had to “report out” their results and the other students and I graded them. • The students gave an oral presentation and turned in a written report for their 5S project, and they were graded on the quality of their project by both the class and me. • The students turned in a summary of their Kaizens for the semester. <p><u>Performance</u></p> <ul style="list-style-type: none"> • The average score on the in-class activities was 92%. • The 5S report average grade was 88%. • Everyone earned 100% on their Kaizen assignments. <p><u>Comments</u></p> <ul style="list-style-type: none"> • I had good participation on the in-class activities, which is the main objective of these learning experiences. • While the average for the 5S reports was good, I was a little disappointed in the overall quality of the projects. • Some of the students thought the Kaizen assignment was a little redundant, so I am going to change it next semester.

Learning Objective 3: Students will develop an understanding of the types of accounting information that are relevant and necessary for decision making in a lean environment

Specific Learning Activities	Specific Assessment and Performance
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<ul style="list-style-type: none"> • Students will read the book <i>Who's Counting</i> • Alignment in-class activity • Students will read the following chapters in Practical Lean Accounting: <ul style="list-style-type: none"> Chapter 3: Cell Performance Measures Chapter 4: Financial Benefits of Lean Manufacturing Chapter 8: Value Stream performance measures Chapter 10: Using the Box Score Chapter 11: Calculating Product Costs Chapter 19: Performance measures linkage chart 	<p><u>Assessment Methods</u></p> <ul style="list-style-type: none"> • Class discussions—participation grades • Quiz on Who's Counting • Homework problems assigned for Chapters 4 & 10. • Alignment exercise report outs <p><u>Performance</u></p> <ul style="list-style-type: none"> • Participation grades were around 4—5 is maximum possible. Good participation generally. • Who's Counting quiz average > 90% • Homework scores were > 90%. • Everyone did well on the alignment exercise <p><u>Comments</u></p> <ul style="list-style-type: none"> • Need to assign some challenging questions for this area. • Who's Counting quiz could be more challenging • Needed more time for alignment exercise to do a good job • Will also give some "surprise" reading quizzes in the future.
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Learning Objective 4: Students will gain an understanding of the meaning and relevance of lean accounting

Specific Learning Activities	Specific Assessment and Performance
<ul style="list-style-type: none"> • Students will read the Statement on Management Accounting: Accounting for the Lean Enterprise • Students will read <i>Who's Counting</i> (supports Objective 3 as well) • Students will read the following Chapters from Practical Lean Accounting <ul style="list-style-type: none"> Chapters 1, 2, & 6: Introduction to lean accounting Chapters 5 & 20: Eliminating financial transactions • Lean Accounting case study • ELC Case Study <ul style="list-style-type: none"> Tests plain English P&L knowledge, Box Score preparation, and inventory calculation • Final essay exam 	<p><u>Assessment Methods</u></p> <ul style="list-style-type: none"> • Lean Accounting Case Study • ELC Case study—four sections: <ul style="list-style-type: none"> Two done in class and two out of class • Final essay: choice of three questions related to applications of lean accounting <p><u>Performance</u></p> <ul style="list-style-type: none"> • Average score on the lean accounting case study was 90% • Average score on ELC Case study was 86% • Average score on final essay was 86% <p><u>Comments</u></p> <ul style="list-style-type: none"> • This was a challenging case study and most of the students did an excellent job. I just assigned the first part of it—I think I may expand it next semester, since it is critical to understanding the reporting in value streams • This is a comprehensive case study on lean accounting that is an excellent follow-up to lean accounting case. The in-class part was mixed. I let them do it in groups of 3—some groups were well prepared and some were not. They were given the case to study before class, but not the assignment. I think

	<p>I will clue them in more on what will be expected next time, so they have no excuse in completing it in time. Also, it will be helpful to have a little more flexibility in time. Rushed for second part of in class.</p> <ul style="list-style-type: none"> The final essay exam was very informative regarding what the students had learned about lean accounting. Some essays were very thoughtful and well written, but some were very superficial. I like this comprehensive essay approach as a conclusion to the class.
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Learning Objective 5: Students will learn how to evaluate and improve business processes and gain a practical understanding of lean thinking and lean applications.

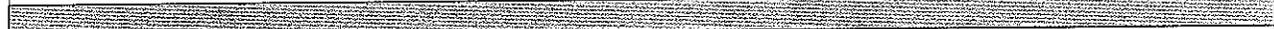
Specific Learning Activities	Specific Assessment and Performance
<ul style="list-style-type: none"> Group project: Process improvement project for external organization (located by instructor) Use of lean tools required Autoliv project: Accounting process improvement project assigned by Autoliv. Prepared in groups Ronny Robot Lean simulation 	<p><u>Assessment Methods</u></p> <ul style="list-style-type: none"> Graded oral and written reports for group project Graded feedback from project “clients” Autoliv evaluation of oral presentations <p><u>Performance</u></p> <ul style="list-style-type: none"> The scores for the three group projects were: 93%, 92%, and 88%. They were all good, but none were outstanding, as I have seen in the past. The feedback from the clients was mixed. One client had high praise for the group project, one was satisfied, and the other client felt the students were responsive enough. This is a concern The average score for the Autoliv project was 88%. This represented a combination of scoring from me and two Autoliv representatives. Even though Autoliv scores were lower, they praised the students for their efforts, picked a “winning” group, and invited the team leader of that group to implement their suggestion at Autoliv for a paid internship! <p><u>Comments</u></p> <ul style="list-style-type: none"> The group project was spread over too long of a period. This resulted in the clients feeling like the students weren’t responsive enough—and the students seemed to lack continuity with the project. They were excited to get it started, and then I had trouble moving them along. The timing also crowded the Autoliv project. I will give a

	<p>shorter time frame to the project next time. Also, one of the projects turned out to be non-accounting related—even though I specifically asked for that with the client. I need to follow through with that better in the future.</p> <ul style="list-style-type: none"> • The Autoliv project was an amazing learning opportunity for the students, even though I am not sure all of them appreciated it. A couple of the groups were upset with their scores and also that they didn't get chosen as the winners. I could have given them a little more warning about evaluations from the "real world." But having it lead to an internship is a real success. In addition, the Autoliv controller, one of my students, and I are writing up a case study related to the project.
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Learning Objective 6: Students will have an exposure to various contemporary internal accounting methods used to aid in decision making.

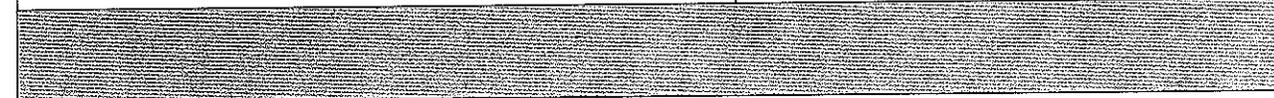
Specific Learning Activities	Specific Assessment and Performance
<ul style="list-style-type: none"> • Read Tom Johnson's articles on the obsolescence of management accounting • Read about "Beyond Budgeting" in <i>Accounting for World Class Operations</i> and <i>Practical Lean Accounting</i> Chapter 13 • Read about target costing in PLA Chapter 16 • Read the Coors case study related to the Balanced Scorecard • Pepperidge Farm plant tour and explanation of standard costing system used • Autoliv plant tour and explanation of lean accounting methods used • Guest speakers: COO and cost accounting from Lifetime Products discussed cost accounting challenges in lean environment 	<p><u>Assessment Methods</u></p> <ul style="list-style-type: none"> • Class debate among traditional accounting, lean accounting, and no management accounting • Beyond Budgeting quiz • Coors case study assignment <p><u>Performance</u></p> <ul style="list-style-type: none"> • We had a "judge" for the debate and chose a winning group. Had strong participation from about ¾ of class—and involved everyone. • Beyond Budgeting quiz was a "surprise" quiz—but students could use their notes. The average was very disappointing—50%. Several students had not done the reading. • The average score on the Coors case study was 85%. <p><u>Comments</u></p> <ul style="list-style-type: none"> • The debate was a lot of fun. The students were pre-assigned to their groups, so they knew what side they would be debating. A few students did not seem to have read the new materials very carefully—but many made some very insightful comments. Would like to find a way to award points a little more effectively—but I have found from previous experience that I need to keep the debate moving along with the judge, which makes it harder to effectively grade

	<p>individual students. Will think about this more.</p> <ul style="list-style-type: none"> • I need to have more reading quizzes to make sure students are doing the reading—especially since we do not have exams in the class. • Although the average score on the Coors case study was acceptable, I believe if the students had worked a little harder, they would have performed better.
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Learning Objective 7: Students will improve their leadership and team-building skills.

Specific Learning Activities	Specific Assessment and Performance
<ul style="list-style-type: none"> • Assigned to teams for group project • Assigned to teams for Autoliv project • Worked in groups in several in-class activities 	<p><u>Assessment Methods</u></p> <ul style="list-style-type: none"> • Peers evaluated each other’s contribution to group project • “Clients” of group projects worked directly with team leaders and were asked to assess team performance • Autoliv evaluated team’s performance <p><u>Performance</u></p> <ul style="list-style-type: none"> • The peer evaluations for the most part were very positive. Most students gave everyone in their group a high score. Only one student received a lower score. She was an international student that I’m afraid was uncomfortable asserting herself. • Autoliv seemed pleased with all of the group efforts. They asked the team leader of the winning group to implement its improvements suggestions at Autoliv. (See above.) <p><u>Comments</u></p> <ul style="list-style-type: none"> • I need to facilitate international students a little better to help the feel comfortable in group settings. I will try to be more cognizant of this situation in the future. • We do a lot of team exercises and group projects in this class, so I feel this objective is certainly accomplished. Perhaps I need to have more individual activities in the class (particularly for assessment purposes)—but lean revolves around team efforts.



Learning Objective 8: Students will improve their communication skills

Specific Learning Activities	Specific Assessment and Performance
<ul style="list-style-type: none">• Group project oral presentation and written report• 5S oral presentation and written report• Autoliv oral presentation• Final essay exam	<p><u>Assessment Methods</u></p> <ul style="list-style-type: none">• Group project oral presentation grades: students and professor• Group project written report• 5S oral presentation (individual): students and professor• Autoliv oral presentation: Autoliv and professor• Final essay exam <p><u>Performance</u></p> <ul style="list-style-type: none">• The oral presentation grades for the group project and 5S project was > 90%. All of the students did an excellent job.• The Autoliv average score for their oral presentation was 86%, but this was for the solution as well as the oral presentation.• The average grade for the “quality of the writing” on the final exam was 87%--just slightly higher than the overall average score of 86%. <p><u>Comments</u></p> <ul style="list-style-type: none">• The Autoliv presentations were not as polished as I am used to seeing from graduate students. I think the group project and the Autoliv project were too close to each other, and the teams didn't have as much time as they should have to prepare the Autoliv presentation. These were also new teams, so they were not as familiar with each other.• That is a good average score for the quality of the final essay, but there was a wider range of scores than I would like to see for graduate students. Writing is an area that can use improvement.