Advanced Topics in Value Creation  
EMEN 5041  
Syllabus

Course Overview

An advanced study of methods designed to maximize excellence in business performance. Includes interactions with the customers and suppliers, integrated manufacturing, and meeting customer requirements while focusing on maximizing profitability. These characteristics are addressed both strategically and tactically through the use of case analysis, field study, and experiential learning for both the production and service sectors. Prerequisite: EMEN 5040

Upon successful course completion, students will be able to:

- Apply the Total Asset Utilization and Customer Product / Process Rationalization (TAU/CPR) models to real world cases in order to optimize profitability.
- Apply the statistically based Supplier Quality Assurance model to the qualification, selection and certification of suppliers, leading to the minimization of total cost associated with purchased goods and services.
- Describe and understand the application of the Statistical Startup model for qualification and optimization of new or existing equipment. Understand how the model is applied to improve asset utilization, reduce cost profiles and improve the quality of products and services.

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1 Adapted from the Fall 2013 Syllabus for EMEN 5041 by Jeffrey T. Luftig, Ph.D.
**Required Text**

No text book is required. All required materials will be provided via the course website at *Desire2Learn*.

**Course Format**

This course will primarily be taught as a “Library Course” using recorded lectures from the Fall 2013 semester. In addition there will be a one hour weekly seminar and discussion conducted on-line. Participation in this seminar, or viewing the recording by those unable to participate live, is required and the material discussed will be testable. This seminar is tentatively scheduled for Wed 5-6 PM Mountain Time which is the first hour of the on-campus course, as originally scheduled. We may adjust this to better accommodate the schedules of class members. The seminar time will be recorded for those who cannot participate live, though live participation is highly recommended.

*Important: the taped lectures will reference coursework, primarily exams and the project, from the 2013 semester. There are differences in the requirements, grading, due dates, etc. Do not allow yourself to be confused by these references.*

**Instructor Contact**

I am not on campus, nor am I in Colorado with any regularity. Contact with me will be by telephone (number TBD), by email (jon.meyer@colorado.edu) or by on-line video conferencing. While I will check my voicemail regularly, the fastest and most dependable way to contact me will be by email. If we need to speak, either by phone or video conference we can make arrangements by email.

**Requirements**

There are 200 points possible (plus 5 possible “Bonus points”). The points are distributed as follows:

- Graded on-line discussions: 20 Points
  
  +5 Possible bonus points

- Course project:
  
  - Proposal: 5 Points
Course grades will be assigned based on the points earned according to the following rubric:

<table>
<thead>
<tr>
<th>Points Range</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;= 186</td>
<td>A</td>
</tr>
<tr>
<td>180 to 185</td>
<td>A-</td>
</tr>
<tr>
<td>174 to 179</td>
<td>B+</td>
</tr>
<tr>
<td>166 to 173</td>
<td>B</td>
</tr>
<tr>
<td>160 to 165</td>
<td>B-</td>
</tr>
<tr>
<td>154 to 159</td>
<td>C+</td>
</tr>
<tr>
<td>146 to 153</td>
<td>C</td>
</tr>
<tr>
<td>140 to 145</td>
<td>C-</td>
</tr>
<tr>
<td>134 to 139</td>
<td>D+</td>
</tr>
<tr>
<td>126 to 133</td>
<td>D</td>
</tr>
<tr>
<td>120 to 125</td>
<td>D-</td>
</tr>
<tr>
<td>&lt; 120</td>
<td>F</td>
</tr>
</tbody>
</table>

*Graded Online Discussion*

Beginning the first week of class students will be expected to contribute one original post and one response to another student’s post in the online
discussion thread for that week. Posts must meet the following requirements:

- Be reasonably related to the week’s discussion topic.
- Be submitted on time – Original posts by 11:59 PM Mountain Time Saturday and responses by 11:59 PM Mountain Time. (See course schedule below)/
- Be no less than 150 words per post, excluding quoted material (i.e., I want to see 150 of your words, not someone else’s).
- Demonstrate thoughtful reflection upon and understanding of the week’s discussion materials.
- Reflect reasonable care in mechanics (i.e., grammar, punctuation and spelling).

Posts will be graded as follows:

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Does not meet the requirements above.</td>
</tr>
<tr>
<td>1</td>
<td>Meets the requirements.</td>
</tr>
<tr>
<td>1 (+1 bonus)</td>
<td>Meets the requirements, plus earns a bonus for a particularly insightful contribution supported by outside material. Something that makes me say, “Wow.”</td>
</tr>
</tbody>
</table>

Only one original response and one response per student will be graded each week. You are welcome to submit more than one of either or both types per week, but if you do please indicate at the beginning of the posts whether or not you want them graded. If you do not, I’ll choose one of each to grade.
There will be approximately 12 weeks of posts with two graded posts (one original and one response) per student. However, there are only 20 points available (not counting the 5 possible bonus points). Once a student accumulates 20 non-bonus points for posts, no other non-bonus points will accrue.

“Bonus” points are the only possible form of extra-credit available for the course. A student can earn not more than 5 bonus points in the course of the semester.

Course Project

The course project is intended to allow students to apply what they have learned in EMEN 5040 and EMEN 5041 to a real world situation of their choosing, subject to the instructor’s approval. Generally speaking, students should choose to apply one of the following to their selected situation:

- Strategic Planning & Policy Deployment
- Total Asset Utilization / CPR Analysis
- Customer Quality Assurance / Customer Satisfaction Improvement
- Supplier Quality Assurance
- Daily Management
- Employee Involvement

Team projects are allowable and might, for instance, involve applying several of the above to the same situation. If you want to do a team project contact me at least one week prior to the proposal due date so we can establish parameters for your team.

There are three graded elements to the project:

- Project proposal
- Paper
- Final Presentation
All three elements must be submitted by the due dates unless other arrangements are made with me in advance. Except in truly exceptional circumstances, assignments submitted after the due date will receive 0 points unless advance arrangements are made.

**Project proposal (one page):** must contain a clear statement of the problem / situation you will be investigating and a statement of your proposed deliverables. If we have agreed on a team project, the proposal must also include the names of the team members and a general outline of the responsibilities of each member. I may return your proposal to you for revision. If so, you will have one week to make the requested changes and resubmit. Proposals will be graded based on clarity, supplying the requested information and mechanics (spelling, punctuation, grammar).

*Important* — an approved project proposal **must** be in place before the rest of the project will be graded. That means that a late proposal must still be submitted for approval, even though it will receive 0 points. **Must be submitted as a PDF document.**

**Paper:** the paper is to be in a 12 pt. font, 1.5 spaced with 1” margins all around. It is to be 8 to 10 pages not including cover page, list of works cited, tables, figures, charts, etc. All tables, figures, charts, etc. should be included in an appendix after the main body of the paper. Any pages past 10 pages in the main body will not be read or graded (but team papers will be scaled appropriately by the number of people on the team). Your paper must begin with an executive summary of no more than one half of a page that communicates the basics of the rest of the paper and convinces me, as a business executive, that it’s worth my time to read the rest of the paper (don’t worry, for class purposes, I’ll read it regardless). From there, explain the nature of the situation or problem being addressed and the tool or tools applied (e.g., Policy Deployment or TAU/CPR). You must then describe the application of the tool(s) to the problem and your results. From there, you need a conclusion that includes a summary and recommendations for next steps that are supported by the rest of your
paper. A more detailed guide to grading criteria will be supplied before the project proposal due date. **Must be submitted as a PDF document.**

**Final Presentation:** an 8-10 minute audio / video presentation is required (as with the paper, presentation time will be scaled with team size for team projects). This presentation should be a briefing for business executives. In 8-10 minutes, you will not be able to cover your project to the same level of detail as in your written report. You will be graded on how well you organize and summarize your key points and recommendations, how well your graphics support the rest of your presentation and, ultimately, whether I feel that I, as an executive, would have the information needed to take necessary action after your presentation. A more detailed guide to grading criteria will be supplied before the project proposal due date. **Slides, etc. must be submitted as a PDF document.**

**Exams and Final**

The exam structure for the course includes one exam for each section of the course (TAU/CPR, SQA and SSUP) with each exam paired with a section of the final. Students may take all, some or none of the sections of the final. If you do not take a section of the final, your score for that section of the course will be double your score on the exam for that section. If you do take the final section and do better than you exam for that section, your score will be double the final section score. If your final section score is not better than your section exam score, your score for the section will be the sum of your section exam and final section score. For example:

<table>
<thead>
<tr>
<th>Course Section</th>
<th>Exam Score</th>
<th>Final Section Score</th>
<th>Total Section Points</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAU/CPR</td>
<td>22</td>
<td>Not taken</td>
<td>44</td>
<td>Final section not taken so exam score doubled</td>
</tr>
<tr>
<td>SQA</td>
<td>3</td>
<td>9</td>
<td>18</td>
<td>Final section score better so final section score doubled.</td>
</tr>
<tr>
<td>SSUP</td>
<td>6</td>
<td>5</td>
<td>11</td>
<td>Final section score not better so both scores summed.</td>
</tr>
</tbody>
</table>

Each section of the final functions as a second chance to demonstrate mastery of material not quite mastered for the section exam. Because the final sections offer the opportunity to make-up missed section exams there will be no extension of due dates for section exams, regardless of the reason.
The first two exams will primarily be drawn from the lectures and required readings, however some questions will come from the on-line seminars and the graded discussion boards. The third will draw questions from the student project presentations as well as the lectures and required reading material on SSUP (Statistical start-ups).

### Tentative Course Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Subject</th>
<th>Discussion / Reading</th>
<th>Discussion Post Guide Questions</th>
<th>Due (11:59 PM Mountain time)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3 Sep</td>
<td>TAU</td>
<td>Dr. Luftig’s TAU article.</td>
<td>How might you measure <em>availability</em> and <em>duty cycle</em> in your industry?</td>
</tr>
<tr>
<td>3</td>
<td>10 Sep</td>
<td>TAU</td>
<td>Dr. Luftig’s CPR Article</td>
<td>How might you measure <em>efficiency</em> and <em>yield</em> in your industry?</td>
</tr>
<tr>
<td>5</td>
<td>24 Sep</td>
<td>CPR</td>
<td>TAU / CPR Case study</td>
<td>How is the product mix determined by your business / employer? How are</td>
</tr>
<tr>
<td>Week</td>
<td>Course</td>
<td>Topic</td>
<td>Question</td>
<td>Due</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
<td>-------</td>
<td>----------</td>
<td>-----</td>
</tr>
<tr>
<td>6-1 Oct</td>
<td>CPR</td>
<td>Case study continued</td>
<td>How are costs tracked and allocated by your business / employer?</td>
<td>Original post due 4 Oct.</td>
</tr>
<tr>
<td>7-8 Oct</td>
<td>CPR</td>
<td>Exam prep</td>
<td>Now that we’ve studied this module: how might the concepts in the article be applied in your work?</td>
<td>TAU / CPR Exam released 8 Oct.</td>
</tr>
<tr>
<td>8-15 Oct</td>
<td>SQA</td>
<td>Commentaries on Deming's Fourth Point</td>
<td>What are the advantages and disadvantages of single sourcing? Soul sourcing? What is the difference?</td>
<td>Original post due 18 Oct.</td>
</tr>
<tr>
<td>9-22 Oct</td>
<td>SQA</td>
<td>SQA Case study #1</td>
<td>What goods and services does your business depend upon? What are their critical characteristics? How might you apply SQA working with this suppliers?</td>
<td>TAU / CPR Exam due 22 Oct.</td>
</tr>
<tr>
<td>10-29 Oct</td>
<td>SQA</td>
<td>SQA Case study #2</td>
<td>How might the customer’s SQA and supplier’s CQA</td>
<td>Original post due 1 Nov.</td>
</tr>
<tr>
<td>Date</td>
<td>Course</td>
<td>Topic</td>
<td>Question</td>
<td>Due Date</td>
</tr>
<tr>
<td>-------</td>
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</tr>
<tr>
<td>11</td>
<td>SQA</td>
<td>Control &amp; Capability Analysis Flow Chart General Guidelines for Vendor / Supplier Selection Flow Chart</td>
<td>How would you convince your employers that a formal SQA program is worthwhile? How might you gain vendors enthusiastic commitment?</td>
<td>Original post due 8 Nov. Response due 11 Nov.</td>
</tr>
<tr>
<td>13</td>
<td>SSUP</td>
<td>The Statistical Start-Up Model: An Interview with Dr. Jeffrey Luftig</td>
<td>Class Presentations</td>
<td>SQA Exam due 19 Nov. No graded posts due, but please offer classmates feedback on their presentations</td>
</tr>
<tr>
<td>14</td>
<td>Thanksgiving Week</td>
<td></td>
<td></td>
<td>No graded posts due, but please offer classmates feedback on their presentations</td>
</tr>
<tr>
<td>Date</td>
<td>Event</td>
<td>Details</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>----------------</td>
<td>-------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 3 Dec | SSUP Exam released | 3 Dec.  
No graded posts due, but please offer classmates feedback on their presentations. |
| 10 Dec| SSUP Exam Due   | 10 Dec.  
No graded posts due.  
Project Papers due 12 Dec.  
Final Exam released 13 Dec. |
| 16 Dec| Finals          | Final Exam Due 19 Dec.                                                  |

**Standards for mechanics in graded discussions and the final paper**

Students in this course are presumed to be professionals and capable of doing professional level work, including written assignments. Few of us are perfect in this regard, but I expect you to submit professional quality work. If you have trouble with spelling or typing, by all means, make sure you use a spell checker. If you have trouble with grammar and punctuation, have someone proofread your writing first (and try to learn why they want you to make the corrections they suggest).

I am not going to penalize you for every misspelled work, missed comma, etc. However, if your work is hard to understand or if your writing is poor enough to call into question your credibility, it will be reflected in your grade. Before you submit something, ask yourself if you would want the president of your company to judge you
by it. Would you want a customer to judge your company by what you’ve written? Would your boss want either of those to see what you’ve written?

If the answer to any of those questions is, “No,” your work probably isn’t ready to be turned in.

**Assistance, Outside Resources and Academic Honesty**

All assignments are open book, notes, Internet resources, etc. For exams, you may not receive any assistance from any individual other than the instructor. That means you may, for instance, research an answer on the Internet, but you may not post a question on a discussion board and then use the response to help you answer an exam question. When in doubt, ask the instructor.

For your discussion posts, you are encouraged to utilize outside resources, but be sure to give credit where credit is due. For these posts, a formal citation isn’t necessary, but failure to acknowledge when you are referencing the work of others’ is not acceptable.

For your project presentations, your PowerPoint (or whatever equivalent presentation tool you choose) must include a list of “works consulted” at the end. You do not need to cite every reference to someone else’s work in the course of the presentation; you wouldn’t do that in a business presentation and you don’t have time in an 8-10 minute presentation. However, stating the authority for key points in your presentation can powerfully bolster your credibility, so make judicious use of such verbal citations. The preceding notwithstanding, NEVER represent other’s work as your own.

For your final papers, pick a standard (e.g., the American Psychological Association standard) to document your sources and utilize consistently it throughout. All sources (whether external or from course materials) are to be appropriately and correctly acknowledged. Do not be surprised if your papers are submitted to a plagiarism checking system.

Any violation of the above policies will be reported as a potential honor code violation.
Copyrighted Materials.

The Engineering Management Program (EMP) has a large distance learning population and, as such, copyrighted materials are sometimes offered electronically to students. EMP has the responsibility to comply with copyright law regulating distance education for a non-profit, state institution; that is, the Technology, Education and Copyright Harmonization (TEACH) Act of 2002. It remains the student’s responsibility to comply with U.S. copyright law with respect to the use and sharing of the electronic materials provided within the program.

Additional Information

Syllabus addendum for the EMP – Fall 2014

PROGRAM & UNIVERSITY PROVISIONS AND REQUIREMENTS

1. Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, color, culture, religion, creed, politics, veteran’s status, sexual orientation, gender, gender identity and gender expression, age, disability, and nationalities. Class rosters are provided to the instructor with the student’s legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. See policies at http://www.colorado.edu/policies/classbehavior.html and at http://www.colorado.edu/studentaffairs/judicialaffairs/code.html#student_code

2. Access to Recorded Course Lectures

The lecture videos are available for streaming and downloading via Desire2Learn (D2L) by all students registered for their respective EMEN course; whether they are on-campus or distance students. This improves the quality of the educational experience for all students, enabling any student to review each lecture as many times as needed to master the material. If you have difficulties accessing the video, FIRST check Technical Help / FAQ at: https://cuengineeringonline.colorado.edu/distance-delivery/technical-help-faq. If you are still experiencing difficulties, please contact: caete@colorado.edu.

3. Class Attendance for On-Campus Students

Unfortunately, some on-campus students have used the availability of the lecture videos to stop attending classes, and rely instead on the videos to learn the material. In the opinion of the faculty, this choice often results in a significant reduction in the quality of the educational experience for both on-campus and distance students; therefore, EMP has established the following policy for all on-campus students registering for an EMEN course:

2 Copied from Dr. Daniel Moorer’s EMEN 5030 Syllabus
Class attendance for all on-campus students is expected and required. Unexcused absences may incur a penalty against the student’s final grade.

4. Recording of EMP classes

Please note that students attending EMP classes live, whether on-campus or via teleconferencing, may be recorded.
5. Academic Integrity, Plagiarism, and the EMP Honor Code Quiz

All students of the University of Colorado at Boulder are responsible for knowing and adhering to the academic integrity policy of this institution. Violations of this policy may include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying, bribery, and threatening behavior. All incidents of academic misconduct shall be reported to the Honor Code Council (honor@colorado.edu; 303-725-2273). Students who are found to be in violation of the academic integrity policy will be subject to both academic sanctions from the faculty member and non-academic sanctions (including but not limited to university probation, suspension, or expulsion). Information on the CU Honor Code can be found at http://www.colorado.edu/policies/honor.html

The faculty of the Engineering Management Program (EMP) believe that a culture of integrity is essential to both the long-term, personal success of our students and to the economies and countries in which they live and work. Therefore, EMP has created an Honor Code Violation Policy that specifies a program-specific, academic consequence for a second violation of the CU Honor Code:

EMP HONOR CODE VIOLATION POLICY

Any and all violations of the CU Honor Code in EMP classes will be reported to the Honor Code Council. As per CU’s policy, the faculty member will determine the academic sanction for an offense. The CU Honor Code Council will determine any additional, non-academic sanctions. This portion of EMP’s policy is a restatement of the Honor Code policy approved by the CU Board of Regents.

A second violation of the CU Honor Code by any Engineering Management graduate student will result in the academic sanction of dismissal from the Engineering Management graduate program.

The development of the Internet has provided students with historically unparalleled opportunities for conducting research swiftly and comprehensively. The availability of these materials does not, however, release the student from citing sources where appropriate; or applying standard rules associated with avoiding plagiarism. Specifically, the instructor will be expecting to review papers written by students drawing ideas and information from various sources (cited appropriately), presented generally in the student’s words after careful analysis, synthesis, and evaluation. An assembly of huge blocks of other individuals’ existing material, even when cited, does not constitute an appropriate representation of this expectation. Uncited, plagiarized material shall be treated as academically dishonest. If the student is confused as to what constitutes plagiarism, s/he should review the CU Honor Code on this topic, and refer to the following excellent resources: http://www.northwestern.edu/uacc/plagiar.html and http://owl.english.purdue.edu/owl/printable/589/

Students agree that by taking this course all required papers may, at the discretion of the instructor, be subject to submission for a Textual Similarity Review to Turnitin.com for the detection of plagiarism. All submitted papers will be added as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers in the future.
Finally, the Engineering Management Program faculty have established a policy whereby all students enrolled in an EMP course must, at the beginning of each semester, take and pass a basic quiz about the CU Honor Code. Each student must take the quiz once each semester, regardless of how many courses they are taking in the department. You must receive 100% on the quiz in order to pass the exam. **The instructions and quiz will be made available on D2L when the student enrolls for any EMEN course or any course cross-listed, co-listed or co-located with an EMEN course.**

6. **Positive Learning Environment**

The University of Colorado Boulder (CU-Boulder) is committed to maintaining a positive learning, working, and living environment. The University of Colorado does not discriminate on the basis of race, color, national origin, sex, age, disability, creed, religion, sexual orientation, or veteran status in admission and access to, and treatment and employment in, its educational programs and activities. (Regent Law, Article 10, amended 11/8/2001). CU-Boulder will not tolerate acts of discrimination or harassment based upon Protected Classes or related retaliation against or by any employee or student. For purposes of this CU-Boulder policy, “Protected Classes” refers to race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, or veteran status. Individuals who believe they have been discriminated against should contact the Office of Discrimination and Harassment (ODH) at 303-492-2127 or the Office of Student Conduct (OSC) at 303-492-5550. Information about the ODH, the above referenced policies, and the campus resources available to assist individuals regarding discrimination or harassment can be obtained at http://www.colorado.edu/odh .

7. **Proper Use of Copyrighted Materials**

The Engineering Management Program (EMP) has a large distance learning population and, as such, many copyrighted materials are offered electronically to students. EMP has the responsibility to comply with the copyright law regulating distance education for a non-profit, state institution, i.e., the Technology, Education and Copyright Harmonization (TEACH) Act of 2002. It’s the student’s responsibility to comply with U.S. copyright law with respect to the use and sharing of the electronic materials (this includes the videos of class lectures) provided within the program.

8. **Appropriate Classroom Use of Laptops**

Although having a laptop in class opens up new learning possibilities for students, sometimes students utilize it in ways that are inappropriate. It is easy for your laptop to become a distraction to you and to those around you. Therefore, please refrain from instant messaging, e-mailing, surfing the Internet, playing games, writing papers, doing homework, etc. during class time. Acceptable uses include taking notes, following along with the instructor on PowerPoint, and other directed class activities, as well as working on assigned in-class activities, projects, and discussions that require laptop use.

9. **E-mail Account**

You are expected to use your CU student e-mail account. **All of your e-mail from professors and the university will be sent to your CU e-mail account.** You can choose to redirect your CU email to an alternate (work/personal) email account. For assistance in activating your email account and forwarding email, contact the Help Desk at 303-735-HELP or Help@colorado.edu.

10. **If you qualify for accommodations because of a disability, please submit to your professor a letter from Disability Services in a timely manner (for exam accommodations provide your letter at least one week prior to the exam) so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities. Contact Disability Services at 303-492-8671 or by e-mail at dsinfo@colorado.edu**
11. If you have a temporary medical condition or injury, see Temporary Injuries under Quick Links at Disability Services website and discuss your needs with your professor. Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or class attendance. Students for whom religious observances conflict with class schedules should contact the instructor no later than two weeks before the potential conflict to request special accommodations. See full details at http://www.colorado.edu/policies/fac_relig.html.