Deploying the LAI Lean Academy as a Special Elective

Lean Educator Conference
April 25, 2008
Overview

• Desire: Find a way to expose MIT students to lean concepts while they’re at school

• Options
  • Create a new regular length course on lean
  • Scatter lean concepts throughout existing classes
  • Offer a Lean Academy during the January period between semesters
Undergraduate Value Stream
Notional Based on MIT Calendar

- **Freshman Year**
  - Summer
  - Fall Sem
  - Vac
  - IAP
  - Spring Sem

- **Sophomore Year**
  - Summer
  - Fall Sem
  - Vac
  - IAP
  - Spring Sem

- **Junior Year**
  - Summer
  - Fall Sem
  - Vac
  - IAP
  - Spring Sem

- **Senior Year**
  - Summer
  - Fall Sem
  - Vac
  - IAP
  - Spring Sem
Undergraduate Value Stream
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Senior Year
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- Fall Sem
- Vac
- IAP
- Spring Sem
Lean Academy IAP Offering

• Elective course for 2 units of Pass/Fail credit

• 3 consecutive days in January, 8am-5:30pm

• 25 students total
  • 13 grad, 12 undergrad
  • 20 Aero/Astro Engineering, 3 Engineering Systems, 1 Mechanical Engineering, 1 Management

• Recruited through flyers, emails, announcements in sophomore course
IAP Course 16.687(U)/16.983(G)

Everything you didn't learn in Unified...

This intensive three day course will provide practical insight into Lean Six Sigma principles used throughout the aerospace industry and government sector.

These principles come alive through a plant tour and interactive game. The knowledge gained will provide you a competitive edge for internships and future employment.

What: 16.687/16.983, 2 units of P-D-F
When: Wednesday Jan 23-Friday Jan 25
Instructors: Earl Murman, Annalisa Weigel, Allen Haggerty and speakers from industry
Enrollment is limited to 30 students.
Email Prof. Murman, murman@mit.edu, by December 21 to reserve your spot in this popular course.

...but need to succeed in the aerospace industry.
<table>
<thead>
<tr>
<th>Time</th>
<th>Wed Jan 23</th>
<th>Thu Jan 24</th>
<th>Fri Jan 25</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00</td>
<td>Why Am I Here? (with continental breakfast) - 45 min</td>
<td>Icebreaker &amp; Day 1 Recap</td>
<td>Icebreaker &amp; Day 2 Recap</td>
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<tr>
<td>8:30</td>
<td>Break - 15 min</td>
<td>Enterprise Simulation - Segment I - 90 min</td>
<td>Accounts Payable VSM - 60 min</td>
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<tr>
<td>9:00</td>
<td>The Start of Your Lean Journey - 60 min</td>
<td>Break 15 min</td>
<td>Break - 15 min</td>
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<tr>
<td>9:30</td>
<td>Break - 15 min</td>
<td>Break 15 min</td>
<td>Variability Simulation - 45 min</td>
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<tr>
<td>10:00</td>
<td>Break - 15 min</td>
<td>Lean Supply Chain Basics - 45 min</td>
<td>Break - 15 min</td>
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<tr>
<td>10:30</td>
<td>Northrop Grumman Talk - 45 min</td>
<td>Enterprise Simulation II - Lean</td>
<td>Quality Tools Part 1 - 45 min</td>
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<tr>
<td>11:00</td>
<td>Break - 15 min</td>
<td>Thinking Refresh and Change</td>
<td>Break - 15 min</td>
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<tr>
<td>11:30</td>
<td>Lean Thinking - 60 min</td>
<td>Planning - 75 min</td>
<td>Quality Tools Part 2 - 45 min</td>
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<tr>
<td>12:00</td>
<td>Lunch - 45 min</td>
<td>Lunch - 45 min</td>
<td>Lunch - 45 min</td>
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<tr>
<td>12:30</td>
<td>New Balance Plant Tour, Lawrence MA</td>
<td>Enterprise Simulation - Segment II - 60 min</td>
<td>Lunch - 45 min</td>
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<tr>
<td>1:00</td>
<td>Lunch on Bus</td>
<td>Pratt &amp; Whitney Talk - 30 min</td>
<td>Break - 15 min</td>
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<tr>
<td>1:30</td>
<td>Schedule</td>
<td>Lean Engineering Basics - 45 min</td>
<td>Break - 15 min</td>
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<tr>
<td>2:00</td>
<td>12:30-1:15 - Travel</td>
<td>People - 75 min</td>
<td>Break - 15 min</td>
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<tr>
<td>2:00</td>
<td>1:15-1:30 - Check in</td>
<td>1:30-2:30 - Intro and Tour</td>
<td>Lean Implementation - 90 min</td>
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<tr>
<td>2:00</td>
<td>2:30-2:50 - Q&amp;A, refreshments</td>
<td>2:30-3:00 - Board bus</td>
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<tr>
<td>2:30</td>
<td>2:50-3:00 - Board bus</td>
<td>Break 15 min</td>
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<td>3:00</td>
<td>3:00-3:45 - Travel</td>
<td>Enterprise Simulation III -</td>
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<td>3:00</td>
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<td>Refresh and Change Planning - 60 min</td>
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<tr>
<td>4:00</td>
<td>Break - 15 min</td>
<td>Break - 15 min</td>
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<tr>
<td>4:30</td>
<td>Video - 30 min</td>
<td>Enterprise Simulation - Segment III - 45 min</td>
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<td>4:30</td>
<td>Break - 15 min</td>
<td>Accounts Payable I-15 min</td>
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<tr>
<td>5:00</td>
<td>VSM Exercise - 45 min</td>
<td>Wrap up - 15 min</td>
<td>Wrap up - 15 min</td>
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<td>5:00</td>
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<td>Case Study Homework</td>
<td>Graduation</td>
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Student Feedback

• A real success!

• Positive
  • Plant tour and seeing lean in “real life”
  • Lego simulation to bring theoretical concepts to life

• Constructive
  • Spread over 4 days (or more) instead of 3 – too much information in too short a time
  • Volume of PowerPoint charts was overwhelming
Date: February 11, 2008 4:54:56 PM PST
To: Earll Murman <murman@mit.edu>
Subject: Lean Academy Class

Prof. Murman,

I wanted to thank you one more time for having the lean class as an undergraduate offering last IAP. Last week at the career fair, I was able to talk about it and it really got the employers' attention. One person from Boeing told me to write it in a bigger font on my resume. Hope everything is well in Seattle.

Sincerely,
-Dember
"What value did you get from this course?"

Write your answer on an index card, and hand it to the Department Head (who paid for this course) when he shakes your hand at graduation.

The Lean course was extremely useful for me. I had heard about these topics but the speakers, plant tour and simulation made the learning real. I immensely enjoyed the enterprise simulation. The course will prove useful to me in my job search and future employment.
Future Plans?

• Offer the Lean Academy during the January period in 2009
  • Seek Department sponsorship to cover expenses

• In discussions with other units about tailored offerings