ENTREP 951/ISEN 430
Northwestern University
Winter Quarter 2014

COURSE
NUvention Energy (ISEN 430 / ENTR 951)

TEXT  Disciplined Entrepreneurship, Bill Aulet, Wiley, 2013
http://disciplinedentrepreneurship.com/blog/toolbox-startups-extended-version-bills-
24-steps-video
(Available on Amazon as an e-book)

TIME
Wednesdays, 6:30-9:30PM

LOCATION
Farley center classroom, Ford design center

PROFESSOR
Mark Werwath, Clinical Professor, Associate Director, Farley Center for Entrepreneurship and Innovation (FCEI), McCormick School of Engineering
m-werwath@northwestern.edu, 847-491-4696, Tech C118

FACULTY
Adam Goodman, Clinical Associate Professor in McCormick and Director of the Center for Leadership.  a-goodman@northwestern.edu, 847-491-3214
Dan Brown, Clinical Associate Professor, McCormick School of Engineering and Segal Design Institute
dan-brown@northwestern.edu, 708-923-1040
David Dana, Professor of Law, Northwestern University School of Law
d-dana@law.northwestern.edu, 312-503-0240
Michael Gruber, Cornerstone Angels, FCEI Adjunct Lecturer
Michael.gruber@northwestern.edu,
Elizabeth McCarthy mccarthy.eliz@gmail.com, Adjunct Lecturer
Hillary Hass-Teaching assistant

PROGRAM WEBSITE
http://nuvention.northwestern.edu/energy

CONTENT WEBSITE
http://www.udacity.com/view#Course/ep245/CourseRev/1/Unit/473001/Nugget/420003

PROGRAM
Jeff Henderson, Assistant Director of Marketing and Communications, Institute for Sustainability and Energy at Northwestern (ISEN): jeffhenderson@northwestern.edu
Megan Everett, Assistant Director, FCEI, m-everett@northwestern.edu

TEACHING ASSISTANT
Hilary Hass (Hillary Hass hphass@gmail.com)
OFFICE HOURS
I will try to be in the classroom by 5:30PM and will stay after class is completed. I am on campus every weekday. Please email me to schedule a time. Please contact other NUvention members directly to schedule an appointment.

PROGRAM OFFICES
ISED, Chambers Hall, 600 Foster Street, #130, Evanston,
847-467-1475 / 847 467-0174 (fax)

Farley Center for Entrepreneurship and Innovation, Ford Engineering Design Center, 2133 Sheridan Road, #2-331, Evanston,
847-467-6347 / 847-467-4727 (fax)

COURSE OVERVIEW
NUvention energy is designed to expose students to all aspects of the business development process from the idea to the creation, financing and running of a start-up business.

In this class the concept of “application” extends to creating businesses to leverage innovations specifically in the energy space. Engineers are great innovators but sometimes a great innovation never reaches its potential since a business was not created to exploit it. NUvention energy is designed to teach you the skills to build a business. Students that are not engineering majors will also greatly benefit from this class. This course emphasizes the need for cross-functional teams, part of your grade will be based on how well you function in the team.

This class cannot make you into an entrepreneur. It can help you better assess whether an idea is a business opportunity and how to transform that opportunity into a business.

As you already know, the best way to learn something is to actually do it. Since we cannot find companies for all of you to run, we will do the next best thing. The class project will involve putting together a business plan within small groups. This process should help students take advantage of whatever current or future business opportunities they may choose to pursue.

COURSE GOALS
Our overall goal is to help you understand how to evolve an idea into a business. Our course objectives include:

- How to develop an idea
- How to assess whether and idea is a good business opportunity
- How to build a valid business model
- Obtain solid understanding of Lean Start-Up
- Developing sound business strategy
- Understand how to create value in a business
- How to market your business
- Building a successful team
- Developing and protecting intellectual property
- Developing compelling idea pitches and business models
- Understanding how to value a business
- How to raise capital
- Understand how to allocate equity among founders and employees

Over time, you will more than likely forget the some of the cases and other things you learn here. My hope is you never forget how to spot a good idea and develop it into a business.
STUDENT ROLE
For you to spend the time reading, analyzing and writing up the cases, it is my responsibility to see that you get the most out of your efforts. I hope to create a classroom environment that is interesting and fun. Your participation in class is **CRITICAL** to accomplishing our goal. You should come prepared to discuss the assigned case and reading.

INSTRUCTOR ROLE
My role as instructor is to facilitate the learning. You will do the majority of the talking. I will be taking notes on the board to help provide a path through the cases and the materials are mostly on blackboard that I will highlight during the course.

GRADING
Your grade will be compiled from these different components:

- **TEAM ASSESSMENT** 10%
- **BUSINESS IDEA/CANVAS/ELEVATOR** 20%
- **WEEKLY STATUS REPORTS** 20%
- **ADVISOR ASSESSMENT** 20%
- **BUSINESS PLAN** 30%

Class participation will be graded based on quality versus quantity. I place high importance on comments that move the class discussion forward. Class attendance will be factored into your participation score.

For the business pitch/canvas, the students will form groups of up to four people and develop an idea pitch and a complete business model with supporting documentation for an idea they would consider pursuing.

CLASS FORMAT
70% of class time will be allotted to discussing the topic of the session, 30% will be allocated to either team feedback time and/or team workgroup time.

COURSE PREREQUISITE
It is your responsibility to insure that you meet the prerequisites for this course.

BUSINESS PITCH
This is a graded exercise where your team will be graded on the quality of the business concept and how well it was captured in the business plan.

BUSINESS PLAN
This is due no later than March 19th. This is a document that describes your business in some detail. It will be contained in the business plan. Your thoroughness and details and business viability will be judged both in writing and in your team’s final presentation this week. This is a team graded deliverable.

NOTICE OF VIDEO AND AUDIO RECORDING
Students in this course may be subject to periodic audio and video recording. Such recordings will potentially be used by Northwestern University in the future and made available through various means, including web pages, to both students and advisors in the program. By registering for the course, you are consenting to such recording and consenting to having the materials made available for academic and marketing purposes.
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<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
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<tr>
<td>1</td>
<td>1/8/14</td>
<td><strong>Working in Teams</strong>&lt;br&gt;Guest Speaker: Adam Goodman  &lt;br&gt;<strong>Lean Startup in Energy &amp; Business Model Canvas</strong>&lt;br&gt;Mark Werwath  &lt;br&gt;• Aulet steps 0 through 3  &lt;br&gt;A startup story from clean energy. Case study Clean Power finance  &lt;br&gt;Guest Speaker: Gary Kremen</td>
<td>• Develop customer development plan  &lt;br&gt;• Steve Blank video 1.5A and 1.5B. See link above</td>
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<td>2</td>
<td>1/15/14</td>
<td><strong>Team Check-in</strong>&lt;br&gt;Two minute pitches  &lt;br&gt;<strong>Business Model Canvas &amp; Lean Design</strong>&lt;br&gt;Mark Werwath  &lt;br&gt;Aulet steps 4 through 5  &lt;br&gt;Guest speaker: Bert Valdman, “Disruptors and Disruptees in the electric markets”</td>
<td>• 2 minute elevator pitch to Advisory Board  &lt;br&gt;• Write down hypothesis for each of 9 parts of canvas, ways to test the hypotheses, and how to determine if the hypothesis passed or failed  &lt;br&gt;• Competitor analysis – incumbents, new entrants, substitutes</td>
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<td>1/22/14</td>
<td><strong>Customer Development</strong>&lt;br&gt;Guest Speaker: Michael Maley of Hydro Green  &lt;br&gt;Mark Werwath  &lt;br&gt;• Aulet steps 6-8  &lt;br&gt;Regulatory and policy: Madeleine Klein</td>
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<td>1/29/14</td>
<td><strong>Pivoting and the Search for the White Space</strong>&lt;br&gt;Mark Werwath  &lt;br&gt;• Aulet steps 9-11  &lt;br&gt;<strong>SiNode case</strong>&lt;br&gt;Samir Mayekar  &lt;br&gt;<strong>Systematic White Space Exploration</strong>&lt;br&gt;Guest Speaker: Dan Brown</td>
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<td>5</td>
<td>2/5/14</td>
<td><strong>Entry Formation, General Legal &amp; Regulatory Issues</strong>&lt;br&gt;Aulet steps 12-14  &lt;br&gt;Guest Speakers: Jim Cahan+ associate</td>
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<td>2/12/14</td>
<td><strong>Intellectual Property, Patents &amp; Licensing</strong>&lt;br&gt;Guest Speaker: David Dana  &lt;br&gt;• Aulet steps 18-21</td>
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<td>2/19/14</td>
<td><strong>Selling energy</strong>&lt;br&gt;Guest Speaker: Tim Stojka  &lt;br&gt;<strong>Agentis Case</strong>&lt;br&gt;• Aulet steps 15-18  &lt;br&gt;<strong>MIDPOINT REVIEW</strong>&lt;br&gt;Advisory Board, Faculty, and Guests</td>
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<td>2/26/14</td>
<td><strong>Positioning, Pricing, etc.</strong>&lt;br&gt;Funding &amp; Financing (Angel and Venture Capital)&lt;br&gt;Aulet steps 19-23  &lt;br&gt;Guest Speaker: Michael Gruber</td>
<td>• Outside speakers arranged by Michael Gruber representing funders.</td>
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<td>3/5/14</td>
<td><strong>Wrap Up – the State of Clean Tech</strong>&lt;br&gt;Aulet: Step 24 and missing steps</td>
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LEADERSHIP ASSESSMENT

Team assessment tool can be accessed at:

lead.northwestern.edu/ta

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<td>13-Jan</td>
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<td>Charter Group</td>
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<td>Mid Quarter Individual</td>
<td>8-Feb</td>
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<td>19-Feb</td>
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<tr>
<td>Final Individual</td>
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<td>Final Group</td>
<td>12-Mar</td>
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Guest Speaker: TBD

10 3/12/14 FINAL PRESENTATIONS
Advisory Board, Faculty, Guests