

## ENGR 245: The Lean Launch Pad

**Course Title:** Technology Entrepreneurship and Lean Startups  
**Units:** 3-4  
**Instructors:** Steve Blank, Ann Miura-Ko, Jon Feiber  
**TA's:** Thomas Haymore, Felix Huber  
**Grading:** Letter (ABCD/NP)  
**Days and Times:** Tues 4:15-7:05pm **Office Hours:** Tues 3:00-4:00pm  
**Location:** Psych (Jordan Hall) 041  
map: <http://campus-map.stanford.edu/index.cfm?ID=01-420>  
**Webpage:** <http://e245.stanford.edu/>  
**Texts:**

- Steven Blank, *Four Steps to the Epiphany*  
<http://www.stevenblank.com/books.html>
- Alexander Osterwalder & Yves Pigneur, *Business Model Generation*  
<http://www.businessmodelgeneration.com/order.php>
- Jessica Livingston, *Founders at Work*  
<http://www.amazon.com/gp/product/1590597141>

**Prerequisite:** interest/passion in discovering how an idea can become a real company.

**Goal:** provide an experiential learning opportunity showing how engineers, together with scientists and other professionals, really build companies.

**Course Description:** This course provides real world, hands-on learning on what it's like to actually start a high-tech company. This class is *not* about how to write a business plan. It's not an exercise on how smart you are in a classroom, or how well you use the research library. The end result is *not a PowerPoint slide deck for a VC presentation*. Instead you will be getting your hands dirty talking to customers, partners, competitors, as you encounter the chaos and uncertainty of how a startup actually works. You'll work in teams learning how to turn a great *idea* into a great *company*. You'll learn how to use a *business model* to brainstorm each part of a company and *customer development* to *get out of the classroom* to see whether anyone other than you would want/use your product. Finally, you'll see how *agile development* can help you rapidly iterate your product to build something customers will use and buy. Each week will be new adventure as you test each part of your business model and then share the hard earned knowledge with the rest of the class. Working with your team you will encounter issues on how to build and work with a team and we will help you understand how to build and manage the startup team.

**Class Organization:** *This class is primarily team-based.* Working and studying will be done in teams. Your team must submit a proposal for approval during the first week of the quarter.

Proposals can be software, physical product, or service of any kind. Projects are treated as real start-ups, so the work load will be intense.

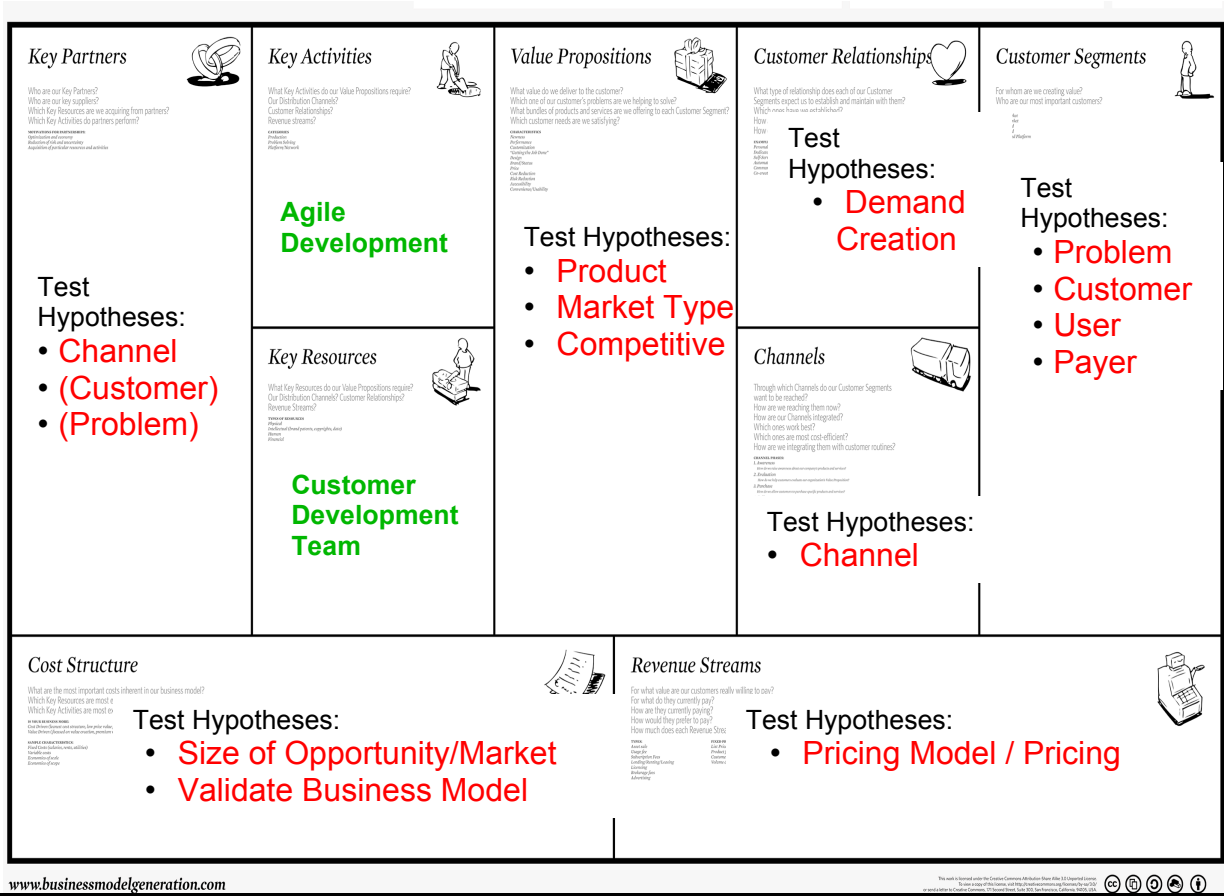
Besides the instructors and TA's, each team will be assigned a mentor (an experienced entrepreneur or VC) to provide assistance and support.

**Suggested Projects:** While your first instinct may be a web-based startup we suggest that you consider a subject in which you are a domain expert, such as your graduate research. In all cases, you should choose something for which you have passion, enthusiasm, and hopefully some expertise. Teams that select a web-based product will have to build the site for the class.

# Class Roadmap

Each week's class is organized around:

- A lecture on one of the 9 building blocks of a business model (see diagram below, taken from *Business Model Generation*).
- Student presentations on their “lessons learned” from getting out of the building and iterating or pivoting their business model.
- Each team will capture their progression in learning by keeping an on-line journals/blogs/wiki.



“Genius is the ability to make the most mistakes in the shortest amount of time.” Aspiring entrepreneurs need to become fast iterators.

## **Class Date      Topic/Agenda Summary**

*Pre-reading*      For 1<sup>st</sup> Class: Read pages 1-51 of Osterwalder's *Business Model Generation*.

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### **1      Jan 4<sup>th</sup>      Intro/Business Model/Customer Development**

*Class Lecture/Out of the Building Assignment:*

What's a business model? What are the 9 parts of a business model? What are hypotheses? What is the Minimum Feature Set? What experiments are needed to run to test business model hypotheses? What is market size? How to determine whether a business model is worth doing?

*Deliverable:* Set up teams by Thursday, Jan 6 (a mixer will be hosted at the Treehouse at 5PM on Wednesday to help finalize teams). Submit your project for approval to the teaching team.

*Read:*

- *Business Model Generation*, pp. 118-119, 135-145, skim examples pp. 56-117
- *Four Steps to the Epiphany* Chapters 1-2
- Steve Blank, "What's a Startup? First Principles,"  
<http://steveblank.com/2010/01/25/whats-a-startup-first-principles/>
- Steve Blank, "Make No Little Plans – Defining the Scalable Startup,"  
<http://steveblank.com/2010/01/04/make-no-little-plans---defining-the-scalable-startup/>
- Steve Blank, "A Startup is Not a Smaller Version of a Large Company",  
<http://steveblank.com/2010/01/14/a-startup-is-not-a-smaller-version-of-a-large-company/>

*Deliverable for January 11th:*

- Write down hypotheses for each of the 9 parts of the business model.
- Come up with ways to test:
  - is a business worth pursuing (market size)
  - each of the hypotheses
- Come up with what constitutes a pass/fail signal for the test (e.g. at what point would you say that your hypotheses wasn't even close to correct)?
- Start your blog/wiki/journal

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Jan 6<sup>th</sup>      5-7pm **Speed Dating (Meet in Thornton 110)**

**Get quick feedback on your initial team business concept from the teaching team.**

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## 2 Jan 11<sup>th</sup> Testing Value Proposition

### *Class Lecture/Out of the Building Assignment:*

What is your product or service? How does it differ from an idea? Why will people want it? Who's the competition and how does your customer view these competitive offerings? Where's the market? What's the *minimum feature set*? What's the Market Type? What was your inspiration or impetus? What assumptions drove you to this? What unique insight do you have into the market dynamics or into a technological shift that makes this a fresh opportunity?

### *Action:*

- Get out of the building and talk to 10-15 customers face-to-face
- Follow-up with Survey Monkey (or similar service) to get more data

### *Read:*

- *Business Model Generation*, pp. 161-168 and 226-231
- *Four Steps to the Epiphany*, pp. 30-42, 65-72 and 219-223
- *The Blue Ocean Strategy* pages 3-22

### *Deliverable for Jan 18<sup>th</sup>:*

- Find a name for your team.
- What were your value proposition hypotheses?
- What did you discover from customers?
- Submit interview notes, present results in class.
- Update your blog/wiki/journal

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## 3 Jan 18<sup>th</sup> Testing Customers/users

### *Class Lecture/Out of the Building Assignment:*

Who's the customer? User? Payer? How are they different? How can you reach them? How is a business customer different from a consumer?

### *Action:*

- Get out of the building and talk to 10-15 customers face-to-face
- Follow-up with Survey Monkey (or similar service) to get more data

### *Read:*

- *Business Model Generation*, pp. 127-133
- *Four Steps to the Epiphany*, pp. 43-49, 78-87 224-225, and 242-248
- Giff Constable, "12 Tips for Early Customer Development Interviews," <http://giffconstable.com/2010/07/12-tips-for-early-customer-development-interviews/>

*Deliverable for Jan 25<sup>th</sup>:*

- What were your hypotheses about who your users and customers were? Did you learn anything different?
  - Submit interview notes, present results in class. Did anything change about Value Proposition?
  - What are your hypotheses around customer acquisition costs? Can you articulate the direct benefits (economic or other) that are apparent?
  - If your customer is part of a company, who is the decision maker, how large is the budget they have authority over, what are they spending it on today, and how are they individually evaluated within that organization, and how will this buying decision be made?
  - What resonates with customers?
  - For web startups, start coding the product. Setup your Google or Amazon cloud infrastructure.
  - Update your blog/wiki/journal
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## 4 Jan 25<sup>th</sup> Testing Demand Creation

*Class Lecture/Out of the Building Assignment:*

How do you create end user demand? How does it differ on the web versus other channels? Evangelism vs. existing need or category? General Marketing, Sales Funnel, etc

*Action:*

- If you're building a web site:
  - Small portion of your site should be operational on the web
  - Actually engage in "search engine marketing" (SEM) spend \$20 as a team to test customer acquisition cost
    - Ask your users to take action, such as signing up for a newsletter
    - use Google Analytics to measure the success of your campaign
    - change messaging on site during the week to get costs lower, team that gets lowest delta costs wins.
  - If you're assuming virality of your product, you will need to show viral propagation of your product and the improvement of your viral coefficient over several experiments.
- If non-web,
  - build demand creation budget and forecast.
  - Get real costs from suppliers.

*Read:*

- *Four Steps to the Epiphany*, pp. 52-53, 120-125 and 228-229
- Dave McClure, "Startup Metrics for Pirates",  
<http://www.slideshare.net/dmc500hats/startup-metrics-for-pirates-seedcamp-2008-presentation>
- Dan Siroker, "How Obama Raised \$60 Million by Running a Simple Experiment",  
<http://blog.optimizely.com/how-obama-raised-60-million-by-running-an-exp>

*Watch:* Mark Pincus, "Quick and Frequent Product Testing and Assessment",  
<http://ecorner.stanford.edu/authorMaterialInfo.html?mid=2313>

*Deliverable for Feb 1<sup>st</sup> :*

- Submit interview notes, present results in class.
- Did anything change about Value Proposition or Customers/Users or Channel?
- Present and explain your marketing campaign. What worked best and why?
- Update your blog/wiki/journal

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## 5 Feb 1<sup>st</sup> Testing Channel

*Class Lecture/Out of the Building Assignment:*

What's a channel? Direct channels, indirect channels, OEM. Multi-sided markets. B-to-B versus B-to-C channels and sales (business to business versus business to consumer)

*Action:* If you're building a web site, get the site up and running, including minimal feature.

- For non-web products, get out of the building talk to 10-15 channel partners.

*Read:* *Four Steps to the Epiphany*, pp. 50-51, 91-94, 226-227, 256, 267

*Deliverable for Feb 8<sup>th</sup>:*

- For web teams:
    - Get a working web site and analytics up and running. Track where your visitors are coming from (marketing campaign, search engine, etc) and how their behavior differs. What were your hypotheses about your web site results?
    - Submit web data or customer interview notes, present results in class.
    - Did anything change about Value Proposition or Customers/Users?
    - What is your assumed customer lifetime value? Are there any proxy companies that would suggest that this is a reasonable number?
  - For non-web teams:
    - Interview 10-15 people in your channel (salesmen, OEM's, etc.).
    - Did anything change about Value Proposition or Customers/Users?
    - What is your customer lifetime value? Channel incentives – does your product or proposition extend or replace existing revenue for the channel?
    - What is the “cost” of your channel, and it's efficiency vs. your selling price.
  - Everyone: Update your blog/wiki/journal.
    - What kind of initial feedback did you receive from your users?
    - What are the entry barriers?
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## 6 Feb 8<sup>th</sup> Testing Revenue Model

*Class Lecture/Out of the Building Assignment:*

What's a revenue model? What types of revenue streams are there? How does it differ on the web versus other channels?

*Action:* What's your revenue model?

- How will you package your product into various offerings if you have more than one?
- How will you price the offerings?
- What are the key financials metrics for your business model?
- Test pricing in front of 100 customers on the web, 10-15 customers non-web.
- What are the risks involved?
- What are your competitors doing?

*Read:* John Mullins & Randy Komisar, *Getting to Plan B* (2009) pages 133-156

*Deliverable for Feb 15<sup>th</sup> :*

- Assemble an income statement for the your business model. Lifetime value calculation for customers.
- Submit interview notes, present results in class.



- Did anything change about Value Proposition or Customers/Users, Channel, Demand Creation, Revenue Model?
- Update your blog/wiki/journal

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## 8 Feb 15<sup>th</sup> Testing Partners

*Class Lecture/Out of the Building Assignment:*

Who are partners? Strategic alliances, competition, joint ventures, buyer supplier, licensees.

*Action:* What partners will you need?

- Why do you need them and what are risks?
- Why will they partner with you?
- What's the cost of the partnership?
- Talk to actual partners.
- What are the benefits for an exclusive partnership?

*Deliverable for Feb 22<sup>nd</sup>*

- Assemble an income statement for the your business model.
- Submit interview notes, present results in class.
- Did anything change about Value Proposition or Customers/Users, Channel, Demand Creation?
- What are the incentives and impediments for the partners?
- Update your blog/wiki/journal

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## 9 Feb 22<sup>nd</sup> Testing Key Resources & Cost Structure

*Class Lecture/Out of the Building Assignment:*

What resources do you need to build this business? How many people? What kind? Any hardware or software you need to buy? Any IP you need to license? How much money do you need to raise? When? Why? Importance of cash flows? When do you get paid vs. when do you pay others?

*Action:* What's your expense model?

- What are the key financials metrics for *costs* in your business model?
- Costs vs. ramp vs. product iteration?
- Access to resources. What is the best place for your business?
- Where is your cash flow break-even point?

*Deliverable for March 1<sup>st</sup>*

- Assemble a resources assumptions spreadsheet. Include people, hardware, software, prototypes, financing, etc.
- When will you need these resources?
- Roll up all the costs from partners, resources and activities in a spreadsheet by time.
- Submit interview notes, present results in class.

- Did anything change about Value Proposition or Customers/Users, Channel, Demand Creation/Partners?
- Update your blog/wiki/journal

*Guest:* Alexander Osterwalder

**For March 1<sup>st</sup> or 8<sup>th</sup>**

- **Prepare 30 -minute Team Lessons Learned Presentation**
- Read:
  - Steve Blank, “Lessons Learned – A New Type of Venture Capital Pitch”, <http://steveblank.com/2009/11/12/“lessons-learned”---a-new-type-of-vc-pitch/>
  - Steve Blank, “Raising Money Using Customer Development”, <http://steveblank.com/2009/11/05/raising-money-with-customer-development/>
  - *Business Model Generation*, pp. 216-224

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10    March 1<sup>st</sup>    **Team Presentations of Lessons Learned** (1<sup>st</sup> half of the class)

*Deliverable:* Each team will present a 30 minute “Lessons Learned” presentation about their business.

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11    March 8<sup>th</sup>    **Team Presentations of Lessons Learned** (2<sup>nd</sup> half of the class)

*Deliverable:* Each team will present a 30 minute “Lessons Learned” presentation about their business.

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**March 11<sup>th</sup> 1-4pm Demo Day at VC Firm (Location TBD)**

Show off your product to the public and real VC’s. Set up a booth, put up posters, run demos, etc. Food and refreshments provided.

## Welcome to E 245

This course provides real world, hands-on learning on what it's like to actually start a high-tech company. This class *is not about how to write a business plan*. It's *not an exercise on how smart you are* in a classroom, or how well you use the research library to size markets. And the end result is *not a PowerPoint slide deck for a VC presentation*. Instead you will be getting your hands dirty talking to customers, partners, competitors, as you encounter the chaos and uncertain of how a startup actually works. You'll work in teams learning how to turn a great *idea* into a great *company*. You'll learn how to use a *business model* to brainstorm each part of a company and *customer development* to get out of the classroom to see whether anyone other than you would want/use your product. Finally, you'll see how *agile development* can help you rapidly iterate your product to build something customers will use and buy. Each week will be new adventure outside the classroom as you test each part of your business model and then share the hard earned knowledge with the rest of the class.

The instructors, entrepreneurs and venture capitalists with decades of experience in building and funding startups, teach you how to be efficient with your time, and others money. **The class limited to graduate students only. The class must be taken for credit.**

## Enrollment

- Admission is by enrollment application *due by the end of the first day of class*.
- You must attend the first class to be considered for enrollment.
- The class list and any wait-listed students will be posted online by midnight January 4<sup>th</sup>
- There's a mandatory student mixer on Wednesday, January 5<sup>th</sup> at 5PM at the Treehouse. Students will form teams and select their preferred mentors.

## Students

- E 245 is **only** open to **graduate** students at Stanford.
- Non graduates and non students can serve as extra members of the teams but our priority is providing a learning environment for Stanford Graduate students.
- Each team must have 4 Stanford Graduate students.
- **Exceptions for team size and external members will be made on a case-by-case basis. Note your special team needs on your application form.** We will let you know on Day one of the class.
- There are no remote options for this course - you must take E 245 on campus.
- You **must** take the course for credit. You may not audit E 245.

- This is very intense class with a very high workload. We expect you to invest at least 5-10 hours per week.
- *You cannot miss the first class without prior approval*

## Company Ideas

- **Is this class for web startups only?**  
No, anyone with any idea and preferably a product can form or join a team
- **What if I do want to test a web idea?**  
Great. Only condition is that you have to get the site up and deliver the minimum product feature set during the quarter.

## Team Formation

- **Do I need to be part of a team before I enroll in class?**  
No. If you have a partial/complete team you are welcome to apply for enrollment. However, we do not guarantee all members will be admitted.
- **Do I need to have a business idea to enroll in E245?**  
No. However, if you do - great!
- **How do teams form? Will I be assigned to a team?**  
We do not assign members to teams. The mixer sessions will introduce you to potential team members.
- **How many people compose a team?**  
Typically 4.

## Attendance and Participation

- *You cannot miss the first class without prior approval*
- If you anticipate missing more than one class, we recommend that you take another course and wait on this one. More than one unexcused absence may result in a full letter grade penalty.
- If you expect to miss a class, please let the TA's and your team members know ahead of time via email.
- We cold call. However we don't want to embarrass you -- if you are not prepared, let one of us know before class and we will not call on you.
- We expect your attention. If you're getting bored, tired or inattentive step outside for some air. If we see reading email or browsing the web we will ask you to leave the class.
- We start and end on time. TA's take attendance in the first five minutes of the class. Do not take this class if you are habitually late!
- We ask that you use a name card during every session of the quarter.

## Help!

- **What kind of support will our team have?**

The teaching team consists of three professors, two TA's. In addition each team will be assigned a "Mentor." A mentor is an experienced entrepreneur or venture capitalist assigned to your team. They've *volunteered* to help with the class and your team because they love startups. Their job is to guide you as you get off the building.

- **How often can we/should we meet with our mentors?**

Your mentor is expecting to meet with you *at least* every two weeks face-to-face. You can email them or meet with them more often as they have time for.

- **Can I talk to a mentor not assigned to my team?**

By all means, do so. All the mentors are happy to help. However they cannot support your team full time unless your mentor decides to swap places with them.

- **I have a busy schedule and my mentor can't meet when I want them to.**

Mentors have day jobs. Asking them to meet or reply to you ASAP is not acceptable. So plan ahead to allow for a reasonable amount of time for a reply or meeting. Be concise with your request and be respectful of their time.

- **I need help now.**

Your first stop are your TA's. Email or sit down with them during the week if you have a problem. Your professors have office hours every Tuesday at 3pm. If you need something resolved sooner, email us.

- **Who are the Mentors?**

See the mentor list at the end of this document and on the class website.

## Team Dynamics

- **What roles are in each team?**

Traditionally, each team member is part of the "customer development team". You have to figure out how to allocate the work.

- **What if my team becomes dysfunctional?**

Prepare to work through difficult issues. If the situation continues, approach the teaching team. Do *not* wait until the end of the quarter to raise the issue.

- **What if one of my teammates is not "pulling his/her weight"?**

Try to resolve it within your team. If the situation continues *longer than a week*, please approach the teaching team. Final grades will also reflect individual participation and contribution.

## Grading

- **How do you determine our grade?**

65% on your weekly lessons learned presentations, 35% on your final presentation.

- **Does everyone in the team get the same grade?**

No. Individual participation and contribution is also considered. You get to grade your team members on their contribution.

- **What kind of feedback can I expect?**

Continual feedback weekly. Substandard quality work will be immediately brought to your attention.

- **Can I take this class Pass/NoCredit?**

No. Letter grade only.

## Intellectual Property

- **Who owns the intellectual property tested in the Business Model?**

*You own* what Intellectual Property (patents, hardware, algorithms, etc.) you brought to class with you. No one has claim to anything you brought to class.

*You share* what *you develop in the class*. For the purpose of this class – getting out of the building to test the business model - there is no need to be sharing patents, hardware, algorithms, etc. If you're building something on the web your team jointly owns the website code regardless of who wrote it. (Though a team member may own the underlying algorithms, etc.) If a team is working with a Stanford related technology (i.e. either research from one of the team members or a Stanford patent), you *must* check with the Stanford Office of Technology & Licensing (OTL) to better understand what licensing and royalties issues.

- **If I feel my idea / Business Plan may become a real company and the "next killer app" what should I do?**

If you feel your idea may become real, discuss Intellectual Property rights with your team from the beginning. If you can't come to agreement with the team, join another team, pick another project, or drop the class.

- **Will my Intellectual Property rights be protected when I discuss my ideas with the class?**

This is an open class. There are no non-disclosures. Keep in mind that successful companies are less about the original idea and more about the learning, discovery and execution. (That's the purpose of this class.) Therefore you must be prepared to share your ideas openly with the class. It is a forum for you to "bounce" your ideas off your peers.

## **E 245 Application Form**

This application is how we choose the students who make it into the class. We're interested in your background and why you want to take the class.

### **Who are you?**

1. First Name, Last Name
2. Student ID Number
3. Email Address
4. Phone Number

### **What are you studying?**

1. Undergraduate School, Major and Graduation Year
2. Current Stanford Degree Program and Department(s) and research title
3. Do have any Work Experience? If so, what?
4. What unique talent or expertise do you bring to the class?

### **Why This Class?**

1. How did you hear about this course?
2. Why do want to take this class?

### **Team/Company Idea?**

1. Do you have a pre-formed team?
2. If so, who are the members, and what's the idea?
3. List two business ideas you'd like to work on during this class. Be as specific as you can. (First Idea)
4. Second Idea

### **Why You?**

If there was one spot left in the class and we were choosing between you and another applicant, tell us why you should be the person in the class.

## Mentor List (as of Dec 3<sup>rd</sup> 2010)

- Gina Bianchini, Ning gina@bianchini.com
- David Camplejohn, Fliptop doug@fliptop.com
- Shawn Carolan, Menlo Ventures shawn@menloventures.com
- Eric Carr, Loopt ecarr@mac.com
- Rowan Chapman, MDV [rchapman@mdv.com](mailto:rchapman@mdv.com)
- Jason Davies, SOS Technologies jmdavies.md.phd@gmail.com
- Jonathan Ebinger, BlueRun Ventures cheryltamcheng@gmail.com
- David Feinleib, MDV
- Jim Greer, Kongregate jim@kongregate.com
- Konstantin Guericke, LinkedIn konstantin@stanfordalumni.org
- Will Harvey, IMVU willharvey@gmail.com
- Thomas Hessler, Zanox
- Heiko Hubertz, BigPoint [h.hubertz@bigpoint.net](mailto:h.hubertz@bigpoint.net)
- Charles Hudson charles@charleshudson.net
- Maheesh Jain, Cafepress [maheesh.jain@gmail.com](mailto:maheesh.jain@gmail.com)
- George John, Rocket Fuel gjohn@rocketfuelinc.com
- Josh Reeves, unwrap joshua.reeves@gmail.com
- Karen Richardson, Silverlake Partners [karenrich@mac.com](mailto:karenrich@mac.com)
- Josh Schwarzapel [joschwa9@gmail.com](mailto:joschwa9@gmail.com)
- Justin Shaffer, Facebook j@fb.com
- Jim Smith, MDV
- Bryan Stolle, MDV
- Steve Weinstein, Movielabs SWeinstein@movielabs.com
- George Zachary, Charles River Ventures [gzachary@crv.com](mailto:gzachary@crv.com)