

BUS-363 Creativity and Inventions for Entrepreneurs

3 credit hours, Spring-2010

place: 4B2-1 IGTC

Class times: Mondays/Wednesdays – 3:15 – 4:30 pm

Instructors:

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RequiredTextbook:

Edward Lumsdaine, and Martin Binks, *Entrepreneurship from Creativity to Innovation: Effective Thinking Skills for a Changing World* (Paperback), Paperback, 222 pages;
Publisher: Trafford Publishing (October 24, 2006); ISBN-10: 142510472X;
ISBN-13: 978-1425104726

Readings:

"**How to Kill Creativity**," by Teresa M. Amabile, *Harvard Business Review*,
September-October 1998, pp.76-87.

"**The Power of Design**," by Bruce Nussbaum, *Business Week*, May 17, 2004, 89-94.

Optional texts:

K. Hanks and J. Parry, *Wake up Your Creative Genius*, Crisp Publications, 1991.

D. Pressman, "Patent it Yourself," 7th ed., Nolo Press, 1998.

M. Josephson, "Edison, a Biography," Wiley, 1992.

All of these texts can be found in regular or online bookstores.

Introduction:

This course can be taken by students in every major. This course is structured both as a lecture and as a lab: it is a "studio" course for tech types. We will learn "left-brained" concepts about patents, marketing, new technologies, and more, while using "right brain" thinking processes all the time. Engineering is one of the Arts, and is treated as such in this class.

Business 363 Terminal Course Objectives

The goal of this course is stimulate thinking and discussion, and to end the semester with some patentable technologies. Students will learn the theories, processes and best practices underlying creativity and innovation. The course also seeks to provide students with a business context for innovation and creativity. It includes a mix of hard and soft business skills from brainstorming techniques to financial analysis to presentation techniques. The functional overview is not intended in any way to substitute for formal classes in these topics, rather to sensitize the students to the need to support their "wild" ideas with value propositions, connection with customer needs, market analysis, and financial feasibility. Deliverables are at least two interesting projects.

Students are expected to demonstrate the following competencies at the end of the semester:

1. Use a variety of creativity enhancing techniques to generate multiple solutions to problems.
2. Use rational criteria to sort creative concepts as a first step to deciding on a new product idea.
3. Generate a value proposition for their creative product or service ideas.
4. Recognize the need for market input into product decisions. Understand basic marketing concepts, value propositions, and pull vs push strategies. Recognize fallacy of a “neat idea” that satisfies no customer need.
5. Be able to demonstrate simple financial analysis of a prospective business taking into account realistic estimates of expenses, timing, sales price, margins, etc. Understand elementary accounting and impact of high discount rates on company valuation.
6. Demonstrate sufficient understanding of the US patent system to avoid improper disclosure of their ideas before protecting them. Be familiar with secrecy agreements, patent disclosures, and patent claims.
7. Demonstrate capability to identify and make appropriate ethical decisions.
8. Understand the basics of project management and demonstrate PM techniques in their term project.
9. Demonstrate capability to develop and present in standard business English a one minute elevator speech, a ten minute angel investment presentation, executive summary, and a full-blown business plan.
10. Appreciate the importance of diversity in a innovation environment.
11. Recognize various business models and their pros and cons for specific opportunities.
12. By the end of the class, generate sufficient self awareness to assess the attractiveness of innovation, creativity, and entrepreneurship as a career path.

Course Procedures:

The first part of each meeting is devoted to presentations: by students, the instructor and guests. Every student is expected to be able to make a short, informal presentation with a minute’s notice. Time will be allotted for brainstorming sessions, and feedback on project ideas. It is very important for all the students to be present during the meeting times, since the main instruction mode is by one-on-one hands-on advising.

Lectures will include highlights of what you will need to know to be a creative contributor in either a small startup venture or the product development arm of a large company.

The grade will be based on the following:

Working prototypes: 35%

Presentations and reports: 45%

Inventor’s notebook: 20%

Final letter grades will be assigned according to the following absolute scale:

A: 80% to full score

B: 65% to 80%

- C: 50% to 65%
- D: 35% to 50%
- E: less than 35% of full score.

This is what is expected in each of the items which make up the grade:

Prototypes 1 and 2: they must work as described in the reports or—if operation can only be demonstrated with great expenditure or time investment—at least must show that the idea can work. Mock-ups just showing the outside look of the product are not sufficient.

Report on project #1: must describe an idea to a potential investor. Therefore, it should equally avoid technical jargon and unsupported claims, while highlighting the advantages of the idea before its competition. It should illustrate how the idea is to be carried into practice and how it will be commercialized, with as much detail as possible. If the prototype has been evaluated by potential clients, mention what you learned from that.

Proposal for project #2: describe your idea to somebody who can give you funds to work on it. Highlight its advantages and its potential. Mention the market impact it might have. A good guideline is to follow the SBIR proposal format (available from Internet). At this point we will select the ideas, and drop the rest.

Report on project #2. This report should have two parts. Part 1 is a technical description of the idea as it would appear in a US. utility patent. Follow that format as closely as possible, including claims. Part 2 is a business and marketing plan, where all the business and legal considerations are collected (they don't belong in a patent). Like in report #1, the idea is to show a potential investor how your invention will make money. Calculating cash flows for a hypothetical venture with some accuracy is a plus. Explain the target market and how your idea can be most successfully launched.

In all reports, it is a good idea to describe your idea as it will be carried out in practice, not as embodied in the prototypes. The prototypes are to be used to perfect your invention, and as illustrations of the idea. They may look very different from the product you envision, if necessary.

Note that the selected projects will become ENPRO projects next fall.

As in all IIT courses, all students are expected to abide by the ethical standards of the IIT Policy on Academic Honesty. Intellectual property will be handled differently whether the project is funded by sponsors or not. The IIT Intellectual Property policy applies.

Important deadlines:

Late February: Presentations for project #1. Report due.

Late March: Presentations to propose project #2. Proposal due.

Last week of classes: Final presentations for project #2. Report (2 parts) and prototype;

These are limit dates, if you are done earlier, you may make your presentation earlier and be done with it.

Project topics:

Project #1 (four-week warm-up): You have two options for these individual-level projects:

1. a toy or game (for children or adults), that can be sold in stores for \$15 or less (this means that it must cost less than \$5 to make in volume). You must have a prototype and proof that it is indeed new: show what toys are similar in what the differences are.
2. a simple device that will help the handicapped or the elderly, or anyone in a household. A patentable prototype must be presented, showing that indeed it is new. It is anticipated that substantial market research will be necessary.

Project #2: the main project: a patentable technology (new, useful, not obvious) of your own. The only limit is the seed funding and the need to have a working prototype by semester's end.

Classroom Environment

Come prepared to learn and have some fun at the same time. The class involves a lot of hard work. Hint: We are fussy about communication - oral and written.

ADA Syllabus Statement - Reasonable accommodations will be made for students with documented disabilities. In order to receive accommodations, students must obtain a letter of accommodation from the Center for Disability Resources and make an appointment to speak with me [the instructor] as soon as possible. The Center for Disability Resources (CDR) is located in Life Sciences Room 218, telephone 312-567-5744 or disabilities@iit.edu.

Appendix: Some Internet URL's useful to get started:

STO's Internet Patent Search System (get patent numbers from manual of classification):

<http://sunsite.unc.edu:80/patents/intropat.html>

Leonardo DaVinci's homepage:

<http://www.leonet.it/comuni/vincimus/inpercor.html>

US. Patent Office Database:

<http://www.uspto.gov/patft>

A patent source a bit friendlier than the USPTO <http://www.pat2pdf.org/>

InventNET-Inventors Network Home Page (links useful for commercializing):

<http://www.inventnet.com/index.html>

Don Moyer (founder of the Chicago Inventors' Council: good links and good advice):

<http://www.donmoyer.com>

Deal Flow (a place where entrepreneurs and venture capital get together)

<http://www.dealflow.com>

National Collegiate Inventors and Innovators Alliance

<http://nciia.org/> (sustainable vision grants, bmeidea grants)

Intellectual Ventures: <http://www.intellectualventures.com/about.aspx>

5D Infusion: <http://www.5dinfusion.com/new-invention-ideas.htm>

Creativity for Innovation: <http://www.creax.net/>