

American University of Beirut
Faculty of Engineering and Architecture
Engineering Management Program

INDE412: Engineering Entrepreneurship

Rationale for the new course

This course aims at introducing engineering students to the process of starting a technology company. This course provides a real life simulation of the process that founders go through when starting a high-tech company. Student will be faced with the key issues involved in evaluating market opportunities, designing profitable business models, producing a solid business plan, raising capital, addressing legal considerations and developing a winning team. Students will gain the skills and tools to creatively commercialize high tech research into profitable businesses.

Catalogue description

INDE412: Engineering Entrepreneurship

This course also provides students with the tools necessary to create and grow a successful, innovative technology enterprise. Topics include evaluating market opportunities, designing profitable business models, producing a solid business plan, raising capital, addressing legal considerations and developing a winning team.

Prerequisites: ENMG 400 or any equivalent course.

Credits: 3cdts.

Required textbook

None

Supplemental materials

Supplied by Instructor

Student learning outcomes

- Students will understand the concepts of technology entrepreneurship
- Students will develop critical thinking and problem solving skills to the diagnosis and solution of problems and issues related to the concepts of technology entrepreneurship and small business/organizational management.
- Students will develop writing and oral skills to communicate technology entrepreneurship and small business/organizational management subjects, ideas, and issues.
- Students will develop interpersonal communication and team working skills dealing with technology entrepreneurship and small business/organizational management topics and issues. This will be measured through a group course presentation during the last weeks of classes.

Student evaluation

- Participation and Homework 15%
- Individually written case submission 15%
- Midterm exam 15%
- Personal Business Plan executive summary 15%
- Written team case analyses 20%
- Final Project and Presentation 20%

Topics to be covered

1. Review of engineering economic principles: How to read a balance sheet, income statement, etc.
2. How to write a business plan
3. How to solicit and assess customer needs – market surveys
4. Intellectual property instruments: Patents, copyrights, trademarks, trade secrets, etc.
5. Marketing and diffusion of new technologies and products
6. Entrepreneurial financing – venture capital money and other types of investors
7. How to make sales pitch
8. Valuation
9. How to form a company (legal structure): various types of companies
10. How to grow beyond a startup or how to exit (growth and exist strategies)

Course instructors

Dr. Kathy Shalhoub

Course Details

<u>Week 1</u>	29-Aug	L1	Introduction to Entrepreneurship
	31-Aug	L2	The Entrepreneurial Life Cycle
<u>Week 2</u>	5-Sep	L3	***NO CLASS***
	7-Sep	L4	What is Innovation?
<u>Week 3</u>	12-Sep	L5	***NO CLASS***
	14-Sep	L6	The Innovation Ecosystem
<u>Week 4</u>	19-Sep	L7	Creativity and Design Thinking
	21-Sep	L8	OAP Lab #1: Design Think Your Project
<u>Week 5</u>	26-Sep	L9	Business Models and Competitive Strategy
	28-Sep	L10	Case Study: Yahoo
<u>Week 6</u>	3-Oct	L11	Startups and the Business Plan
	5-Oct	L12	Entrepreneurial Finance I
<u>Week 7</u>	10-Oct	L13	Entrepreneurial Finance II
	12-Oct	L14	Case Study: IMVU
<u>Week 8</u>	17-Oct	L15	Venture Finance Sources OAP Lab #2: Prototype mentoring
	19-Oct	L16	Guest Lecturer: On Presentation, Elevator pitches and the power of storytelling
<u>Week 9</u>	24-Oct	L17	Legal Matters
	26-Oct	L18	Global Marketing and Sales
<u>Week 10</u>	31-Oct	L19	Guest Lecturer: On Leadership, Management and resource acquisition
	2-Nov	L20	Team Dynamics
<u>Week 11</u>	7-Nov	L21	Midterm
	9-Nov	L22	Case Study: Dropbox
<u>Week 12</u>	14-Nov	L23	Founder's Dilemma I: Equity Splits Case Study: Nanogene
	16-Nov	L24	Founder's Dilemma II: CEO Succession Case Study: Wily
<u>Week 13</u>	21-Nov	L25	OAP Lab #3: Pitch mentoring
	23-Nov	L26	OAP Dress Rehearsals and Mentoring

<u>Week 14</u>	28-Nov	L27	OAP Team Presentations
	30-Nov	L28	OAP Team Presentations
<u>Week 15</u>	5-Dec	L29	Personal Business Plans Due
<u>Week 16</u>	12-Dec	L30	Final OAP Report Due

Note: OAP is the Opportunity Analysis Project. Students are required to come up with a business idea that carries social value, investigate the potential for a business opportunity, come up with a business model, design a prototype, test the prototype on their target market segment and write a final semester report on the entire experience, and conclude on whether their idea has business potential or not. They are also required to create and present a pitch to jury members on their idea.