**Syllabus**

**Project in Innovation**

**Course Number: 099776**

**Number of credit points: 5**

**Mini-Semester:**  **3** **Academic Year: 2022**

**Time:** Thursday, 14:00-18:00

**Course Instructor: Prof. Assaf Avrahami**

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# Course Objectives:

This course simulates the founding of a new venture around innovative ideas in existing organizations. The student will have a unique opportunity to experience an implementation of innovation **implementation** based on **industry 4.0**, digitalization and data driven change management in the organizations, commonly considered to be the most difficult and challenging phase in the firm.

Starting from a basic research idea, each 3-5-Students group will be asked understand the existing problem in the organization, present few potential solutions, selecting the best solution, implementation plan of this innovation project in the organization and implementation process (walk the talk!). The project will include the presentation in front of potential decision makers in the organization (Board members, C level decision makers)

# Course Scope:

# The course will consist of the following phases:\*

# Identifying a need and defining the problem- this part will be done mostly by the organizations that will determine the problem.

The first and complicated step of the journey of an idea is to identify a need and focus the problem, in light of the corporate vision and strategy. Accurate analyses of all problems’ aspects are based on broad knowledge base and proven methodologies as well as rich experience. An accurate analysis helps to clarify the challenge at hand and directs you to possible solutions which take into account all aspects, thus raising the chances of success.

# Idea Generation

# Innovative idea must be creative as well as useful and applicable. Thus, the process of generating ideas to resolve a problem requires breakthrough creativity and flow of ideas, as well as more practical thinking. There are many methodologies for generating ideas, but the one selected must be the most appropriate for the organization, the nature of the problem looking for a solution, and the number of people involved in the process.

# Selecting an idea for implementation

# The flow of ideas requires careful appraisal by different criteria: relevancy to corporate strategy, the required degree of risk, R&D capabilities, marketing options and even a "gut feeling" - all of which may be relevant and should be examined systematically in order to decide between the good ideas that reached the final selection.

# Mobilizing the Idea towards implementation

# The idea has been selected, and a detailed business plan has been written, but its journey to application is still long: day-to-day constraints and shortage of resources, along with resistance to a change that innovation brings - all of which might stop the journey. Anticipating pitfalls when selecting the idea and preparing for them using proven tools ensures that innovation will not die at this stage.

# Implementing the idea up to Innovation

# Product or process, exploitative or exploratory innovation - during its application unexpected problems popup, requires creative and innovative solutions. The journey is completed with the arrival of the product to the end user, outside or within the organization. Innovation may also fail, but this too is not for in vain: an innovative organization perceives failure as a learning process, which enables it to improve, change and succeed in the next round. As with any journey, there is the adventure, challenges and hardships on the way, and the euphoria when successfully reaching the top.

\*Erez M. The journey of the idea.

# Course Content & Requirements:

## Team assembly and Idea selection -

Students are asked to form a team with 3-5 members and send the team's composition along with short CV of each member in the team, by one week before the class starts to nyaron@technion.ac.il.

\* All students should familiarize themselves with the “Journey of the Idea (by M.Erez) See:  <http://innovation.technion.ac.il/default.asp>

Teams will then be asked to choose a challenge related to Industry 4.0 in a specific organization of their choice, and notify the teaching team by February 10th. The list of approved projects will be announced by Session 1.

Each group can select a project at one of the students organizations or from a list that will be published at the course website.

**Each team will set a meeting at the organization with Prof. Assaf Avrahami before the first class**.

## Course Assignments –

1. Four in-class Presentations:

The teams will be asked to prepare and present the following:

# A 5 minutes: defining the problem

– Session #2

# A 5 minutes presentation: Idea Generation

– Session #3

# A 5 minutes presentation: Selecting an idea for implementation

– Session #4

# A 5 minutes presentation: Mobilizing the Idea towards implementation

– Session #5

The 4 presentations will be submitted via Moodle a day before class.

The presentations will be presented in class by one of the team members (each team member will be required to present at least once along the course).

1. Four progress reports (from Week 2 through week 5):

Prior to each session, each team will submit via Moodle a short progress report in the format of a word file (up to 300 words) along with a short presentation (up to 4 slides). The presentation will be presented in class by one of the team members (each team member will be required to present at least once along the course).

1. Final Presentation:

The final team presentation will be composed of a 15-20 slides presentation that will be held during the last session of the course. Each team will have 15-20 minutes to present the project with a panel that will include board members and C' level decision makers from organizations.

Although in real life this type of presentation is usually led by 1-2 members of the team, we would like to allow all team members to participate. Accordingly, **EVERY** team member will actively participate the final presentation.

1. Executive Summary:

Following the final presentation and panelists feedback each team will prepare and submit an executive summary of the project (8-10 pages – 2500-3000 words long, double line spaced, 12 point font size). The document is a summary of the steps required for the implementation and execution of an idea along with the financials specifying the budget requirements and implementation process for the new innovation project.

In week 6 there will be no frontal presentation. Each group will set for those weeks a visit with **all team members** at the organization.

# Course Plan

|  |  |
| --- | --- |
| Session | Date |
| 1 | 17.2.2022 |
| 2 | 24.2.2022 |
| 3 | 10.3.2022 |
| 4 | 24.3.2022 |
| 5 | 31.3.2022 |
| 6 | 7.4.2022 |
| 7 | 28.4.2022 |

**Note:** At 3.3.2022, 17.3.2022, 14.4.2022, 21.4.2022 no session

**Session 1.**

By first session teams should be in groups already.

Course introduction:

* Objectives, processes & expectations.
* Knowledge Center for Innovation (Technion) - Sagi Goldberger
* Identifying a need and defining the problem

Each team will meet Prof. Assaf Avrahami

**Session 2.**

# A 5 minutes presentation: Identifying a need and defining the problem

– Assignment I(1)

A lecture on problem definition; **Idea Generation**

Each team will meet Prof. Assaf Avrahami

**Session 3.**

# A 5 minutes presentation: Idea Generation

Progress reports (All teams) – Assignment II

A lecture on strategic alternatives **Selecting an idea for implementation**

Guest Speaker: case study of implementing INDUSTRY 4.0 (TBD)

Each team will meet Prof. Assaf Avrahami

**Session 4.**

# A 5 minutes presentation: Selecting an idea for implementation

A lecture on Work Plan , implementation.

Guest lecture innovation manager/ VC manager

Each team will meet Prof. Assaf Avrahami.

**Session 5.**

# A 5 minutes presentation: Mobilizing the Idea towards implementation

A lecture on how to cross barriers and show stoppers during implementation.

Guest lecture incubator manager for industry 4.0

Each team will meet Prof. Assaf Avrahami.

**Session 6.**

This meeting will be in each organization to see the project and the way for implementation.

Each team will meet Prof. Assaf Avrahami.

**Session 7.**

Final Project presentations by all teams to a panel of guests

# Student Assessment:

This course accredits 5 points and should be the main course taken during the mini semester. Accordingly, it is expected that EACH student will attend the weekly meetings and invest 10 hours per week either in team or individual work, during the entire period of the course.

The final grade will be based on the following elements:

4 team presentations: 8%

4 team progress reports: 16%

Final team presentation\*\*: 21%

Executive summary: 25%

Team work evaluation (ability to recognize and utilize

team members' strengths/weaknesses, constructive

Within-team conflicts management, balanced Within-team
work load): 15%

Personal contribution (Class discussions / Team work): 15%

 Attending the last session is mandatory.

 Students who plan to miss a session should notify and receive the lecturer's approval, in advance.

Note: The above grade calculation serves as a guide for how grades are calculated. However, changes in the course are to be expected and they will sometimes affect the breakdown of the grade.

# Recommended Readings:

1. [**http://www.ted.com/talks/steven\_johnson\_where\_good\_ideas\_come\_from**](http://www.ted.com/talks/steven_johnson_where_good_ideas_come_from)

2. Vijay Govindarajan (2016). The three box solution: A strategy for leading innovation. Boston Mass. Harvard Business Review Press.

3. Nathan Furr & Jeff Dyer (2014). The Innovator’s Method: bringing the lean start-up into your organization. Boston Mass. Harvard Business Review Press.

4. Viki, T., Toma, D., Gons E. (2017). The Corporate Startup. Vakmedianet, The Netherlands.