האוניברסיטה העברית בירושלים
THE HEBREW UNIVERSITY OF JERUSALEM

The Hebrew University of Jerusalem

Syllabus

FRON IDEA TO PRODUCT - BIOTECHNOLOGY IN ISRAEL - 71207

Last update 10-09-2018

HU Credits: 2

Degree/Cycle: 1st degree (Bachelor)

Responsible Department: Plant Sciences in Agriculture -Special in Biotec

Academic year: 0

Semester: Yearly

Teaching Languages: Hebrew

Campus: Rehovot

Course/Module Coordinator: Amichai Baron

Coordinator Email: Amichai.baron@mail.huji.ac.il

Coordinator Office Hours: By appointment

Teaching Staff:
Dr. Yael Heifetz
Dr. Gadi Riesenfeld

Course/Module description:
The biotechnology (biotech) industry deals with research and development and use of biological systems or living organisms, as well as chemical and bioinformatics tools in making products or processes for usage in the pharmaceutical world, in agriculture, in food production, and beyond. The biotech industry in Israel stands at the forefront of global research, with scientific breakthroughs, creative R&D, development of products that meet real unmet needs on the market and in creating viable business opportunities. The Israeli biotech industry is relatively young, with about 200 active companies and an average of 10% annual growth rate.
There are differences between the development of biotech and hi-tech products. One difference is "time to market". In the world of computers or Internet, time to market is relatively short, while the development of a new biological drug or a genetically modified crop can take between 10-15 years and even more.
What are the characteristics of the Israeli biotechnology industry?
How do good ideas and/or important scientific inventions become a viable basis for developing products and businesses?
The course will expose the students to the Israeli biotech industry through the stories of Israeli biotech companies of various kinds (drug development, agricultural products and food production), presented by entrepreneurs, managers and scientists of such companies.
During the workshop, students will learn what it takes to convert a good idea into a commercialized product in the biotech industry.
Hearing the stories of the Israeli biotech companies, together with visits to the companies and to the international BIOMED conference, will enable the students to sketch the landscape of the Israeli biotech industry.

Course/Module aims:
1. Exposure to the Israeli biotech industry, to understand what a biotech company is and how it operates;
2. To understand the process of developing a biotechnological product from an initial idea/concept to a marketed product;
3. Providing basic tools for assessing the profile of a biotech company.

Learning outcomes - On successful completion of this module, students should be able to:
1. Know the structure of a biotechnology company and how it operates;

2. Be acquaintance with the landscape of the Israeli biotech industry and be exposed to what is happening globally;
3. Have basic understanding of what it takes to convert a good idea into a commercialized product in the biotech industry;
4. Have basic capabilities to analyze a biotech company/technology presented;

Attendance requirements(%):
100

Teaching arrangement and method of instruction: The course will include lecture / discussion, visits to biotech companies and to the Biomed Conference in Tel Aviv. Students will present and submit their work based on their visits the biotech companies.

Course/Module Content:
Information on the workshop program, the aims and objectives;
Introduction - what is a biotechnology company; the development process from concept to product;
Presentations and discussions on various Israeli biotech companies about their path from idea to product;
Visiting biotech companies;
A visit to the biomed conference;
Student's presentations.

Required Reading:
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Additional Reading Material:
Andrews, B. (2011) Personal profile: interview with Bill Andrews, Ph.D. Rejuvenation Res 14, 457-461.

Parida, D. K., Mehdiratta, R.& Saberwal, G. (2008) How many patents does a biopharmaceutical company need? Nat Biotechnol 26, 763-766.

Pisano, G. P. (2006) Can science be a business? Lessons from biotech. Harv Bus Rev 84, 114-124.

Ridley, W. P., Harrigan, G. G., Breeze, M. L., Nemeth, M. A., Sidhu, R. S. & Glenn, K. C.
(2011) Evaluation of compositional equivalence for multitrait biotechnology crops. J Agric Food
Chem 59, 5865-5876.

Villiger, R. & Bogdan, B. (2009) Licensing: pros and cons for biotech. Drug Discov Today 14,
227-230.

Course/Module evaluation:
End of year written/oral examination 0 %
Presentation 45 %
Participation in Tutorials 10 %
Project work 20 %
Assignments 0 %
Reports 0 %
Research project 0 %
Quizzes 0 %
Other 25 %
BioMed

Additional information:
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