



GENERAL

The program is designed for 3rd or 4th year students in relevant departments (e.g. bioengineering, biophysics) who have already completed the following prerequisites at their home institution:

- CELL AND MOLECULAR BIOLOGY
- PHYSICS: MECHANICS
- PHYSICS: ELECTRICITY & MAGNETISM
- CALCULUS
- COMPUTER PROGRAMMING

Students may participate for a single semester or an entire year



Physics, Engineering, and Systems Biology

MULTIDISCIPLINARY RESEARCH AIMED AT THE FUTURE OF BIOLOGY AND MEDICINE

The Hebrew University of Jerusalem is a world-leading research institution, where intellectual pioneering and cutting-edge science flourish. Founded in 1918 by Albert Einstein, the university counts seven Nobel laureates among its faculty and alumni, and was recently ranked as the second best place to work outside the United States.

The rapid growth in scientific, technological and medical knowledge over the last decade has shown that only an integrated multidisciplinary approach could offer solutions to emerging grand challenges in biology and medicine. This

new paradigm transcends traditional boundaries between disciplines, offering a unified approach to the study of biology and the practice of medicine.

The Hebrew University international program in Bioengineering and Systems Biology offers a unique set of integrated courses and laboratory experience in this rapidly growing field. Research projects range from the mapping of transcriptional networks to innovative human-on-chip devices, developmental biology and environmental control of bacterial populations.



SYSTEMS BIOLOGY

Prof. Nir Friedman, winner of the Bruno Award and a prestigious ERC Advanced Grant is the founder of HUJI's System Biology program. His state-of-the-art robotic facility uncovers the fundamentals of DNA regulatory networks in yeast.



BIOENGINEERING

Dr. Yaakov Nahmias, director of HUJI's Center for Bioengineering is the recipient of a prestigious NIH Career Award and an ERC Starting Grant. His work weaves together advanced liver tissue engineering with micro and nano technology.



BIOPHYSICS

Prof. Nathalie Q. Balaban is the head of HUJI's Biophysics program and the winner of an ERC Starting Grant. Her work elucidates the basics of bacterial response to antibiotics, using advanced microdevices and automated imaging.

Hebrew University International Program Bioengineering and Systems Biology

ADVANCED STUDIES IN PHYSICS, ENGINEERING & SYSTEMS BIOLOGY

Pre-Semester Intensive Hebrew Ulpan • 5 credits

Core Courses

Tissue Engineering • 3 credits
Introduction of BioMEMS • 2 credits
Introduction to Systems Biology • 4 credits
HT Approaches in Systems Biology • 4 credits
Analysis of Biological Systems • 4 credits
Life and Death of Proteins • 3 credits

Seminars

Topics in Molecular Biophysics • 2 credits
Seminar in Computational Biology • 2 credits
Biotechnology in Israel • 2 credits

Research Project

Research in Bioengineering • 10 credits

Students who choose to participate for an entire year will be given the opportunity to carry out a senior research project in the laboratory of a core faculty. Students will be expected to devote at least 8 hours a week to research and present their findings at the end-of-the-year symposium.

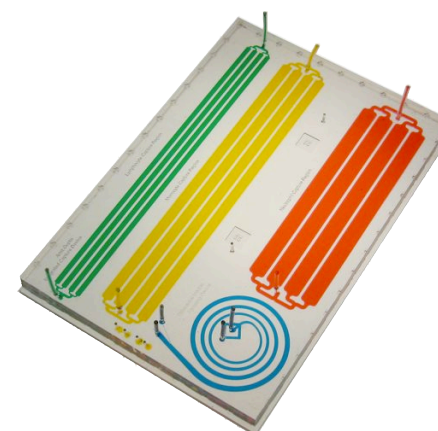
Electives

Students may choose courses in Religious, Israel and Middle Eastern Studies, Psychology, Business, as well as Hebrew or Arabic languages.

<http://overseas.huji.ac.il/undergraduatecourses>

THE ROTHBERG INTERNATIONAL SCHOOL

The Hebrew University's Rothberg International School, established in 1955, offers a wide variety of programs to over 2,000 students each year, who come from 70 countries. Classes at the Rothberg International



School combine academic excellence with the opportunity to live and breathe the subject matter. The wide-ranging academic activities are complemented by stimulating extracurricular activities, including workshops, outings, and tours around Jerusalem and the rest of Israel.

Detailed information about the Rothberg International School and its programs,

including course lists, tuition, fees, and registration, is available online at:

<http://overseas.huji.ac.il/bioengineering>

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Tel: +20-8349-5757 (United Kingdom)

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Bioengineering
Hebrew University