

**MASHAV - Israel's Agency for International  
Development Cooperation**

**with**

**The Hebrew University of Jerusalem  
The Robert H. Smith Faculty of Agriculture, Food &  
Environment, International School of Agricultural  
Sciences**



**STATE OF ISRAEL**



**Israel's Agency for International  
Development Cooperation  
Ministry of Foreign Affairs**



**THE HEBREW  
UNIVERSITY  
OF JERUSALEM**

**The Robert H. Smith Faculty of  
Agriculture, Food & Environment**

**International School of Agricultural  
Sciences**



## About the course

### Background

In cooperation with the Hebrew University of Jerusalem's Faculty of Agriculture – MASHAV's only academic affiliate – we are pleased to announce the opening of a training and capacity building program on Bioinformatics and biotechnology: today's tools for tomorrow's agriculture in a world of global environmental changes. The course will be held in Israel at the Robert H. Smith Faculty of Agriculture, Food and Environment, International School of Agricultural Sciences, in Rehovot from, May 9 – June 8, 2016.

### Aims

Today's challenges are various and contradictory. Increased agricultural yields are needed in order to feed a growing population, negative environmental impacts must be minimized, and production has to adapt to a rapidly and ever-varying environment stemming from climatic change. New technologies and new approaches, such as improved crops through genetic engineering and genomic-assisted breeding, and the use of recycled wastewater, are being developed at our Faculty in order to address these challenges. Our aim is to provide participants with necessary tools to develop and pursue ways of dealing with increased product demand, with the requirement for reduced negative impact and with significant environmental changes such as desertification, water shortages, salt stress and crop diseases.

The course is aimed at promoting the use of new biotechnological techniques in modern agricultural production. The environment is changing and this important parameter will be a central component of this course.

### Main Subjects

The topics will reflect societal research needs and the research interests of our Faculty. They will be organized around central themes relevant to today's agricultural challenges and where biotechnology can make a difference:

❖ **Principles in Biotechnology**

Introduction to Agro Biotechnology and Microbiology

❖ **Molecular Biology:**

Plant molecular biology – basics and principles

Laboratory in Plant Molecular Biology: cloning, plant transformation, gene analysis

❖ **Bioinformatics:**

From single gene analysis to database mining. Basic principles in bioinformatics and laboratory: Nucleotide and protein sequence analyses at various scales, Genomics, Phylogenetic analysis, Diversity analyses, Biostatistics

Molecular markers based plant breeding

Principles of microbial ecology in agricultural biotechnology

Principles in Agro Biotech business

Precision agriculture

❖ **Agriculture under Stress - Climate Change and Desertification**

Improving of Agriculture Yield under abiotic stress

Molecular Breeding Tools

## **Study Conditions**

- Classes will be held at the Faculty's Rehovot campus, where there are laboratories, advanced research equipment and the central library of Agricultural Science.
- Around-the-clock computer access will be provided, and computers will be used extensively.
- We recommend that participants who own a personal computer bring it with them for their own convenience.
- Scientific material and homework will be assigned and graded.
- Professional field trips will be held.
- Full attendance is required.

\*We reserve the right to make changes in the academic program

## **Application**

### **Application Requirements**

#### **Course completion**

Each participant will prepare a seminar presentation, which will be reviewed and graded. It should apply knowledge acquired during the course to a topic in biotechnology. Participants are advised to bring with them digitalized data relevant to their countries. On completion of the course and fulfillment of its requirements, participants will receive certificates.

#### **Requirements**

Candidates interested in attending this program require:

An academic degree (M.Sc. or above) in biology, animal sciences, agriculture, or in a related field from a recognized university.

An authorized certificate of English proficiency at a level of at least 89 on the TOEFL new Internet based scale or an internationally recognized equivalent.

A detailed record of studies and copies of last degree received must be included with application forms.

An official signed and stamped certificate of good health.

Professional experience in the field of biotechnology is preferable.

Letters of recommendation from the candidate's place of work or study.

#### **Cost and application**

Scholarships are available from MASHAV (see below) to cover the fee for study. The scholarship covers tuition, board, lodging and travel in Israel required for the purposes of the program of studies. This fee does not include travel costs to and from the home countries or incidental expenses.

Application forms may be obtained from the nearest Israeli diplomatic or consular representative or can be downloaded from the website of the Israel Foreign Ministry, MASHAV Study Programs at:

<http://www.mashav.mfa.gov.il/MFA/mashav/Courses/Pages/default.aspx>

Completed applications **MUST** be sent directly to the Israeli representative in your country by **April 1<sup>st</sup>, 2016**. In addition, you must send a copy of the forms in PDF format and **not** JPEG to the Faculty by email to: [malab@savion.huji.ac.il](mailto:malab@savion.huji.ac.il).

#### **Additional information**

**ACCOMMODATIONS:** Single bedroom accommodation in a shared apartment will be provided in our fully equipped guest house on campus. Meals will be provided. Both laundry (on campus) and dry cleaning (in town) are at the participant's expense.

## General Information

### Arrival and Departure

Arrival date: 8/5/2016  
Opening date: 9/5/2016  
Closing date: 7/6/2016  
Departure date: 8/6/2016

Participants must arrive at the training center on the arrival date, and leave on the departure date. Early arrivals/late departures if required, must be arranged by the participants themselves, directly with the hotel/center, and must be paid for by the participant him/herself.

### Weather

The weather in Israel during the months of May and June is warm and summery, approximately 18-30°C. Participants are requested to bring light clothes suitable for warm weather, including short-sleeved shirts, a bathing suit (optional), a hat and comfortable walking shoes. It is advisable to bring a light sweater or jacket.

### Location and Accommodation

**MASHAV** awards a limited number of scholarships. The scholarship covers the cost of the training program including lectures and field visits, full board accommodation in double rooms (two participants per room), health insurance (see below) and transfers to and from the airport. Airfares and daily allowance are not included in the scholarship.

### Airport transportation

Those accepted to the course will supply flight details to their local Israeli representative and to us. Upon arrival in Israel, the participant will pick up his/her luggage. After passing through customs, the participant will enter the arrivals terminal and walk towards the left. Go up the escalator to the first floor. On the left, behind the car rental counters, you will see a counter of a company called **MONI-SITON**. This is a special taxi service, which has a list of expected arrivals. Go to the counter and tell them your name, country and that you're attending a course at the Faculty. You will be taken to the Faculty of Agriculture, Rehovot, free of charge. This service is pre-paid.

**PLEASE DO NOT TAKE ANY OTHER FORM OF TRANSPORTATION!**

### Health Services

Medical insurance covers medical services and hospitalization in case of emergency. It does not cover the treatment of chronic or serious diseases, specific medications taken by the participant on a regular basis, dental care and eyeglasses. Health authorities recommend that visitors to Israel make sure they have been inoculated against tetanus in the last ten years. Subject to the full binding policy conditions. Participants are responsible for all other expenses.

### About MASHAV

MASHAV – Israel's Agency for International Development Cooperation is dedicated to providing developing countries with the best of Israel's experience in development and planning. As a member of the family of nations, The State of Israel is committed to fulfilling its responsibility to contribute to the fight against poverty and to the global efforts to achieve sustainable development. MASHAV, representing Israel and its people, focuses its efforts on capacity building, sharing relevant expertise accumulated during Israel's own development experience to empower governments, communities and individuals to improve their own lives.

MASHAV's approach is to ensure social, economic and environmental sustainable development, and is taking active part in the international community's process of shaping the Post-2015 Agenda, to define the new set of the global Sustainable Development Goals (SDGs).

MASHAV's activities focus primarily on areas in which Israel has a competitive advantage, including agriculture and rural development; water resources management; entrepreneurship and innovation; community development; medicine and public health, empowerment of women and education. Professional programs are based on a "train the trainers" approach to institutional and human capacity building, and are conducted both in Israel and abroad. Project development is supported by the seconding of short and long-term experts, as well as on-site interventions. Since its establishment, MASHAV has promoted the centrality of human resource enrichment and institutional capacity building in the development process – an approach which has attained global consensus.

<http://mashav.mfa.gov.il>

<https://www.facebook.com/MASHAVisrael>

## **About**

### **The Hebrew University of Jerusalem**

The Hebrew University of Jerusalem was opened in 1925, preceding the establishment of the State of Israel by more than two decades. The University was designed to be a world class institution of higher learning and research. Today, the Hebrew University comprises seven faculties, 15 schools, some 60 research centers, a student body of about 23,000 and a tenured-track faculty of some 1,500. One third of its enrollment is at the M.Sc. and Ph.D. level.

### **The Robert H. Smith Faculty of Agriculture, Food & Environment**

The Hebrew University's Robert H. Smith Faculty of Agriculture, Food & Environment was established in 1942 in Rehovot, a city at a distance of some 55 km from the main campus of the University in Jerusalem. The site was chosen with considerations of its climate and soil conditions. It is the only agricultural institution of higher education in Israel offering university degrees. The International School of Agricultural Sciences is aim to expose academic graduates from abroad to post-graduate programs, giving them insight into the achievements and research of Israel in general and of the Faculty in particular, expanding their knowledge in specific fields and creating opportunities for international cooperation.

### **For further information, please contact:**

**Address:** International School of Agricultural Sciences

**Robert H. Smith Faculty of Agriculture, Food & Environment**

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