

**The Hebrew University of Jerusalem
The Robert H. Smith Faculty of Agriculture,
Food and Environment**

The School of Nutritional Sciences

**Self-Evaluation Report
Submitted to the Council for Higher Education
September 2011**

Table of Contents

1. The Hebrew University of Jerusalem.....	1
2. The Faculty of Agriculture, Food and Environment.....	4
3. The Evaluated Study Program: The School of Nutritional Sciences....	13
4. Research.....	78
5. The Self-Evaluation Process: Summary and Conclusions.....	99

Chapter 1 - The Institution

1.1 The proposal to establish a Jewish institution for higher education was first raised as early as 1882, yet the cornerstone of the Hebrew University was laid in Jerusalem only in 1918. On April 1, 1925, the University officially opened on Mount Scopus. The academic life of the University (courses and research) took place on Mount Scopus until 1948, the year of the establishment of the State of Israel. During the War of Independence, the road to Mount Scopus was blocked and the University was forced into exile; it continued its activities thereafter in rented facilities scattered throughout various parts of Jerusalem. In 1955, the government of Israel allocated land in the Givat Ram neighborhood for a new Hebrew University campus. In 1967, the road to Mount Scopus was reopened, and academic activities were restored on the Mount Scopus campus in the early 1970s.

The University has since continued to grow, with the addition of new buildings, the establishment of new programs, and the recruitment of outstanding scholars, researchers and students, fulfilling its commitment to excellence.

The Hebrew University of Jerusalem was accredited as an institution of higher education by the President of Israel, Mr. Itzhak Ben-Zvi, in accordance with the Law of the Council of Higher Education, 1958, on the 23rd of August, 1962.

The Hebrew University operates on five campuses:

- Mount Scopus campus, site of the Faculty of Humanities and the School of Education, the Faculty of Social Sciences, the School of Business Administration, the Faculty of Law and the Institute of Criminology, the School of Occupational Therapy, the Paul Baerwald School of Social Work and Social Welfare, the Truman Institute for the Advancement of Peace, the Center for Pre-Academic Studies, the Rothberg International School, and the Buber Center for Adult Education.
- Edmond J. Safra campus in Givat Ram, site of the Faculty of Mathematics and Natural Sciences, The Rachel and Selim Benin School of Engineering and Computer Sciences, The Center for the Study of Rationality, The Institute for Advanced Studies, and the Jewish National and University Libraries.
- Ein Kerem campus, site of the Faculty of Medicine (The Hebrew University–Hadassah Medical School, Braun School of Public Health and Community Medicine, School of Pharmacy, and the School of Nursing) and the Faculty of Dental Medicine.

- Rehovot campus, site of the Robert H. Smith Faculty of Agriculture, Food and Environment (The School of Nutritional Sciences and The Koret School of Veterinary Medicine).
- An additional site is the Interuniversity Institute for Marine Science in Eilat, operated by the Hebrew University for the benefit of all institutions of higher learning in Israel.

Below is the over-all number of students studying towards academic degrees in the institution according to degree:

Students of the Hebrew University (2009)			
1st degree	2nd degree	Ph.D	Total
11,445	6,820	2,667	23,249

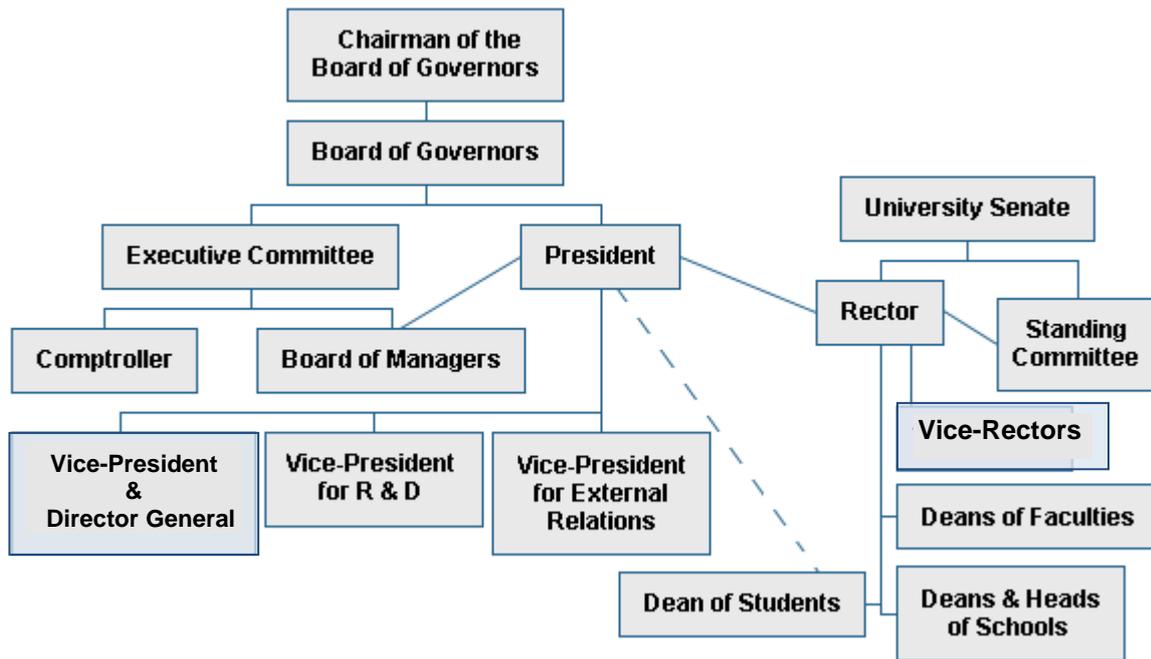
1.2 Mission statement of the institution, its aims and goals

As the first research university in Israel, The Hebrew University's mission is to develop cutting edge research, and to educate the next generations of leading scientists and scholars in all fields of learning. The Hebrew University is part of the international scientific and scholarly network: we measure ourselves by international standards and we strive to be counted among the best research universities worldwide.

The Hebrew University is a pluralistic institution, where science and knowledge are developed for the benefit of humankind. At the same time, the study of Jewish culture and heritage are a foremost legacy of the Hebrew University, as indicated by both its history and its name.

The goal of the Hebrew University is to be a vibrant academic community, committed to rigorous scientific approach and characterized by its intellectual effervescence. These will both radiate and enlighten the University's surrounding society.

1.3 Description of Institution's organizational structure



1.4 Names of holders of senior academic and administrative positions

Chairman of the Board of Governors:

Michael Federmann

President:

Prof. Menahem Ben Sasson

Rector:

Prof. Sarah Stroumsa

Vice-President and Director-General:

Billy Shapira

Vice-President for Research and Development:

Prof. Shai Arkin

Vice-President for External Relations:

Carmi Gillon

Vice-Rector:

Prof. Yaacov Schul

Vice-Rector

Prof. Oded Navon

Comptroller:

Yair Hurwitz

Deans:

Faculty of Humanities:

Prof. Reuven Amitai

Faculty of Social Sciences:

Prof. Avner de Shalit

Faculty of Law:

Prof. Barak Medina

Faculty of Mathematics & Natural Science:

Prof. Gad Marom

Faculty of Agriculture, Food & Environment:

Prof. Aharon Friedman

Faculty of Medicine:

Prof. Eran Leitersdorf

Faculty of Dental Medicine:

Prof. Adam Stabholtz

School of Business Administration:

Prof. Dan Galai

School of Social Work:

Prof. John Gal

Dean of Students:

Prof. Esther Shohami

Chapter 2 - The Parent Unit Operating the Study Programs Under Evaluation

- 2.1 The name of the parent unit and a brief summary of its "history", its activities and development in the period of its existence.**
- 2.2 Mission statement of the parent unit, its aims and goals.**

The Robert H. Smith Faculty of Agriculture, Food and Environment

The Hebrew University of Jerusalem

The Robert H. Smith Faculty of Agriculture, Food and Environment is the only institute of higher education in Israel offering university degrees in agriculture, and is also home to the School of Nutritional Sciences (the only school of nutrition in Israel that confers graduate degrees in biochemistry and nutrition) and the School of Veterinary Medicine. Established in 1942 as the Institute for Agricultural Sciences with 21 master's students, the Faculty today has a student body of 2,200.

The Faculty of Agriculture, Food and Environment has developed considerably since its establishment, in concept as well as in practice. Initial demands were to develop technologies in agriculture that would allow a budding state to feed its populace. Today, Israel's agriculture is far beyond self-sustaining, and has turned its attention to providing advice and guidance to developing countries. In accordance with this shift in national emphasis, the Faculty has undergone a significant shift in paradigm and vision. Today, development of technologies in agriculture must address two essential needs: a) they must provide the means for increasing yields to alleviate world hunger, and b) they must avoid usurpation of natural resources; thus agricultural development takes responsibility for sustaining the environment as well as developing technologies for recycling agricultural bio-waste. Our vision, *feed the world while protecting natural resources*, is supported by the unique qualities of the Faculty, amongst them an outstanding core of scientists (approximately 90) and students striving to develop novel concepts and ways to address the challenge before us, that of providing food for the future and alleviating world hunger. Our goals include the development of long range research, teaching and training programs that will promote the advancement and application of modern agriculture.

The Faculty offers academic programs leading to B.Sc., M.Sc. and Ph.D. degrees in Agriculture, B.Sc. and M.Sc. degrees in Nutrition, and a Doctor of Veterinary Medicine degree. Through its Division for External Studies, the Faculty also offers short-term international postgraduate courses on various agricultural subjects, a non-thesis Master of Science in Agriculture program and a Post-Graduate Diploma in Plant Sciences, all of which are conducted in English for foreign students.

The Faculty's teaching and research activities continue to play a central role in advancing agriculture to strengthen the Israeli economy, while training tomorrow's scientists and agriculturists; protecting and rehabilitating the environment, while increasing food production and reducing world hunger; mobilizing agriculture to meet human health needs and improving the quality and purity of agricultural products; and sharing the benefits of Israeli research and innovation with other nations.

Faculty graduates have widespread occupational functions as well as key roles in Israeli institutions. Our graduates:

- Are active in farming communities - kibbutzim, moshavim and private farms - using their know-how to compete in world food markets;
- Comprise a large part of the staff of the Agricultural Research Organization and the Extension Service of the Ministry of Agriculture;
- Occupy most of the leading positions within the Ministry of Environmental Quality;
- Constitute a significant professional segment of many Israeli high-tech industries involved in local and international agriculture production (drip irrigation, seeds, fertilizers, and biocontrol methods, as well as recycling of agricultural waste and water remediation);
- Are teachers of biology, nutrition and agriculture at universities, high schools and junior high schools throughout the country;
- Serve abroad on Israeli projects of technical aid, cooperation and R&D;
- Serve as dieticians in hospitals, clinics, and outreach programs.;
- Serve as food engineers in the food industry;
- Assume important roles as economic advisors to government ministries, companies and the agricultural sector; and
- Are sought after in the hotel management industry.

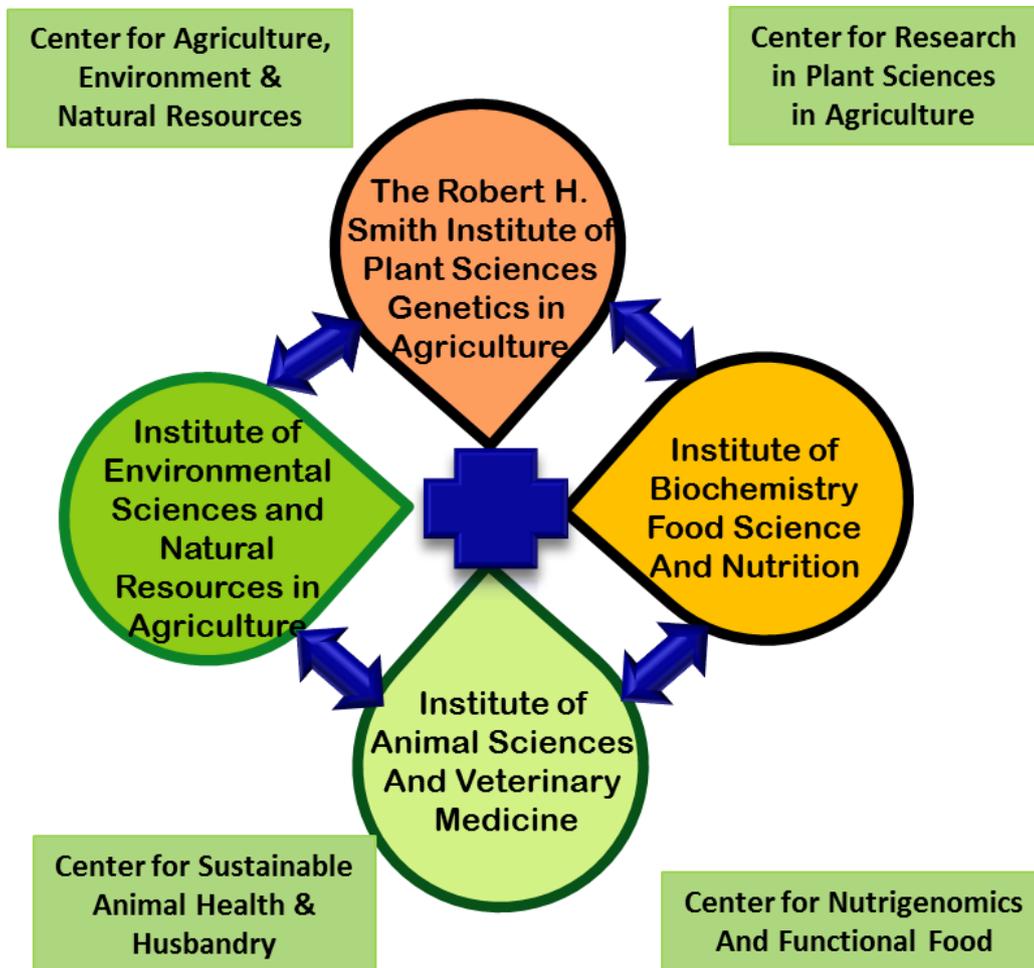
Some of the Faculty research achievements and innovations include:

- Methods of drip irrigation and fertigation.
- Breeding fruits and vegetables selected for industrial harvesting and with long shelf life as well as improved taste and disease resistance and returning fragrance to flowers.
- Development of intensive arid-zone agriculture.
- Soil solarization - a nonchemical method of controlling soil borne plant diseases.
- Green-farming techniques - use of natural biofertilizers and biocontrol by biofungicides and beneficial insects - to reduce the use of chemical fertilizers, fungicides and pesticides.
- Recycling technologies for waste-water reclamation and composting of solid municipal and agricultural wastes; using plants to purify water polluted by heavy metals.

Research at the Faculty has improved and increased yields of fruit, vegetables, grain crops, flowers and cotton; helped overcome problems of pest damage and soil contamination; led to the most efficient use of water for agriculture; produced ground-breaking innovations in irrigation techniques; helped Israel's flower export industry develop from almost nil in the 1960's, to its current status as one of the largest exporters of flowers in the world; produced novel food ingredients having positive metabolic and physiologic effects in various metabolic disorders; revealed mechanisms controlling production and efficiency of ruminants, poultry and fish species; improved the understanding of the pathogenesis of veterinary diseases, and the health of companion and production animals and much more.

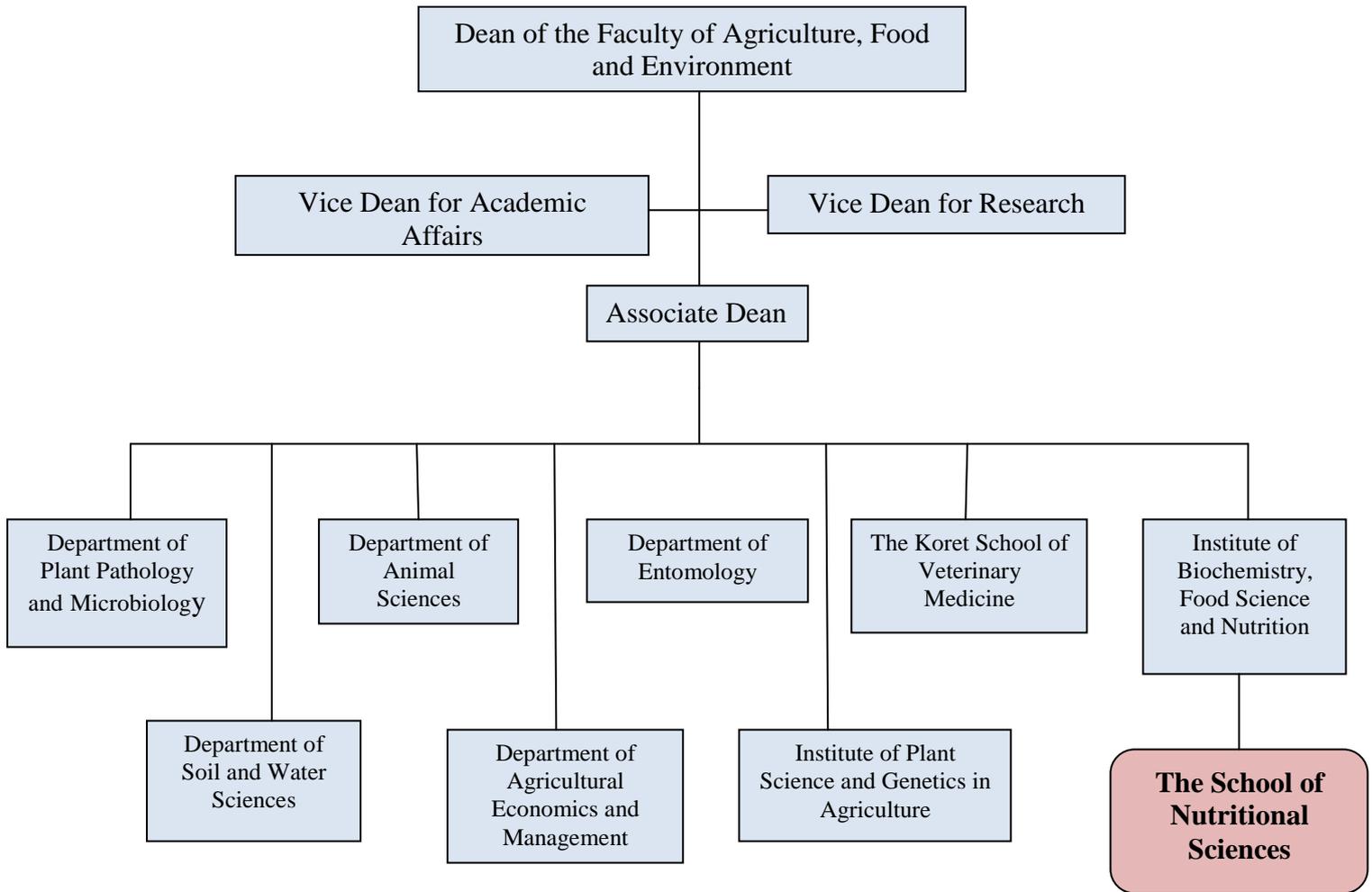
The specific achievements and innovations of the School of Nutritional Sciences include elucidation of the role of Omega-3 fatty acids in bone development, the role of clock genes in obesity, characterization of fatty liver and the role of oxygen radicals, and of iron metabolism and the involvement of intestinal genes. Research by the School has also enhanced our understanding of transcription factors that bind fatty acids in intestinal morphogenesis of cancer, the role of nutritional education in diverse Israeli populations, and the importance of nutritional factors in the development and progress of Alzheimer's disease.

To meet the objectives of our vision, the Smith Faculty has undergone a paradigm shift in the framework of four pillar institutes and four new interdisciplinary research centers:

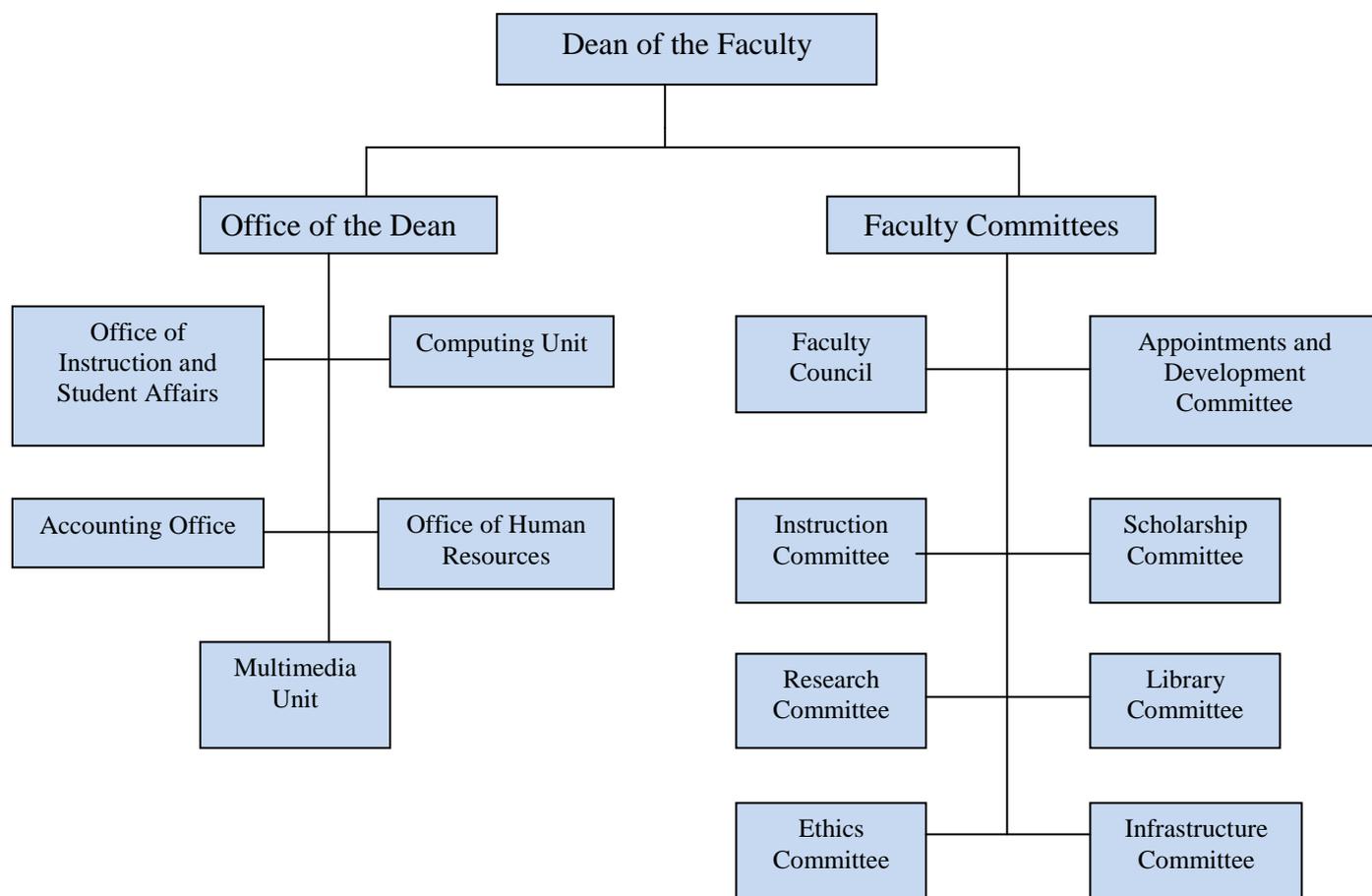


2.3. Description and chart of the unit's academic and administrative organizational structure (including relevant committees), names of holders of senior academic and administrative positions and list of departments/study programs operating in its framework.

**I. Academic and Administrative Organizational Structure – Hebrew University
Faculty of Agriculture, Food and Environment**



II. Offices and Committees



III. Names of holders of senior academic and administrative positions

- Dean: Professor Aharon (Ronnie) Friedman; aharonf@savion.huji.ac.il
- Vice Dean for Research: Professor Shmuel Wolf; swolf@agri.huji.ac.il
- Vice Dean for Academic Affairs: Professor Moshe Coll; coll@agri.huji.ac.il
- Associate Dean: Mr. Dotan Zaidel; dotanz@savion.huji.ac.il

IV. The departments/study programs operating in the framework of the Faculty of Agriculture, Food and Environment.

Department	BSc Agr.	MSc Agr.	PhD	DVM
Plant Sciences in Agriculture	X	X	X	
Plant Protection	X	X	X	
Soil & Water Sciences	X	X	X	
Agr. Economics & Management	X	X	X	
Animal Sciences	X	X	X	
Biochemistry and Food Science	X	X	X	
Field & Vegetable Crops		X	X	
Horticulture		X	X	

Department	BSc Agr.	MSc Agr.	PhD	DVM
Genetics and breeding		X	X	
Environmental Quality and Natural Resources in Agriculture		X		
Animal & Veterinary Sciences		X	X	
Veterinary Medicine			X	X
Department	BSc Nutr.	MSc Nutr.	PhD	
Nutritional Sciences	X	X	X	
Hotel, Food Resources & Tourism Management	X			

Names of degrees:

Bachelor of Sciences

Master of Sciences

Doctor of Veterinary Medicine

Doctor of Philosophy

2.4 Please provide in the format of a table, the number of students in each one of the Unit's departments who are studying and have studied in the unit in each of the last five years according the level of degree (first, second with thesis, without thesis,, doctoral).

2.5 Please provide in the format of a table, the number of students who have graduated from the unit in each of the last five years according the level of degree (first degree, second degree with thesis, without thesis, doctoral degree).

Table 2.4 - 5. The number of students and graduates of the Hebrew University Faculty of Agriculture, Food and Environment, 2005-2011.

Academic year	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Degree	Number of Students / Graduates					
BSc	1350/520	1279/548	1216/550	1343/316	1328/353	1369
MSc (Thesis)	513/119	444/148	475/148	443/120	389/107	354
MSc (without thesis)	69/24	116/22	54/22	40/16	46/13	47
PhD	289/40	295/43	309/28	302/27	326/33	299

2.6 What bodies (internal/external) decide on rationale, mission and goals of the parent unit and of the study programs, how they are decided upon, examined and, if deemed necessary, changed? Have they been discussed within the last five years? If so, please specify when these discussions have taken place and what were their outcomes? If not, when were changes made (if at all)? How are the mission, goals and changes brought to the attention of the teaching staff, the students and the institution's authorities?

The Faculty Council, consisting of all the Professors, Associate Professors, Senior Lecturers and the Lecturers, is the major constitutional body of the Faculty of Agriculture, Food and Environment. This body makes decisions on the rationale, mission and goals of the Faculty and its departments, and is the electoral body of the three managing committees. The three committees are as follows:

- The Appointments and Development Committee under the chairmanship of the Dean. Additional members include the two vice deans, the associate dean, the pro-dean and three members elected by the council. Membership in this committee is for a term of 4 years. This committee makes decisions on all issues of development, such as scientist recruitment, development of research disciplines and more.
- The Instruction Committee under the chairmanship of the Vice-Dean for Academic Affairs. The Dean and representatives of all academic units, as elected by the council, also serve on this committee. Membership in the committee is for a period of 3 years. This committee deals with all matters related to curricular issues, including course approval and structure of course hierarchy.
- The Research Committee under the chairmanship of the Vice Dean for Research Affairs. Four additional members are elected by the council, and a representative of the students' elective body also sits on the committee. Membership is for a period of 3 years. This committee deals with all aspects of research, with emphasis on grant resources as well as application of scientific innovations.

The committees submit their recommendations to the plenum of the Faculty Council for discussion and ratification. All decisions are distributed to the staff, the student elective body and the University authorities in the form of electronic minutes.

In addition to the centralized authorities, each department as a unit sets its general goals and vision for development and recruitment. Departmental Steering Committees pursue the means to put these goals into practice. The committees prioritize fields in the departments that need to be strengthened through the addition of new academic staff and discuss major changes in the curriculum. The departments submit their recommendations to the Faculty's three major committees.

In addition to local Faculty committees, the University has a Teaching Regulations Committee, which consists of all the chairpersons of the Curriculum Committees of the various faculties of the University. This committee is in charge of University regulations concerning instruction and studying. The President and the Rector of the University frequently convene special committees to evaluate specific faculties or departments.

The Faculty's undergraduate study program was recently revised, with the number of credit points reduced from 164 to 150. This major alteration was made following recognition that the undergraduate degree in Agriculture was more intensive by far than that of other life sciences. Each academic unit was requested to revise its undergraduate program with the aim of reducing the number of credit points while maintaining the

excellence of our study record. Intensive discussion at all levels led us to conclude that it would be possible to reduce the learning load to 150 credit points without affecting the quality of undergraduate studies. This decision was approved by University authorities, and is currently undergoing implementation.

2.7. What is the Parent Unit's perception of the evaluated Study Program/Department within its greater framework? Is the study program represented in the Parent unit's decision making bodies?

Within the above context, it is clear that the School of Nutritional Sciences is central to our vision for alleviating world hunger. Alleviation of hunger, thereby realizing our main mission, will be achieved by increasing production, protecting natural resources, developing new and nutritious food supplies and by developing new strategies to meet human nutritional requirements. The two latter objectives are central to the activities and function of our School of Nutrition. Furthermore, the school is committed and dedicated not only to the professional training of dietitians, as are other schools of nutrition which have recently opened in Israel, but also to the far broader vision embraced by the Faculty of Agriculture, Food and Environment as a whole; this commitment, evident in our research and social endeavors, is a unique and essential advantage of the Smith Faculty's School of Nutritional Sciences.

All decision making bodies in the Robert H. Smith Faculty of Agriculture, Food and Environment, as detailed above, include representatives of the Institute of Biochemistry, Nutrition and Food Sciences, the research institute that administers the School of Nutrition.

Chapter 3 - The Evaluated Study Program

3.1. The Goals and Structure of the Study Program

3.1.1. The name of the study program, a brief summary describing its development since its establishment.

The study program of the Hebrew University School of Nutrition Science grants the following degrees:

- BSc in Nutritional Sciences
- MSc in Nutritional Sciences
- Doctor of Philosophy

The concept of the school grew out of a document presented in the mid-1950s to the United States Operations Mission, which was at that time administering a large 6-year grant to the State of Israel for the import and production of food products. The document, which proposed channeling unused funds from the grant into the establishment of a study program in home economics, was sent to the president of the Hebrew University in early 1961.

After discussion by various committees and evaluation of the proposal by the Ministry of Finance, in 1963 the decision was made to establish the program on the campus of the Faculty of Agriculture in Rehovot. The university's financial situation caused a delay in opening the study program until October 1969, when the first 21 students began their studies. The Department of Home Economics was accredited to grant undergraduate degrees in November 1971, and members of the first graduating class received a BSc in Nutritional Sciences upon completion of their studies. Since that time, the Department of Home Economics has grown, developed, and evolved to become the School of Nutritional Sciences, with a current enrolment of approximately 350 at all degree levels.

In 1994, in response to a proposal submitted by the Department of Biochemistry, Food Science and Nutrition and the School of Nutritional Sciences, these units underwent an organizational change and became two divisions of instruction within the newly designated Institute of Biochemistry, Food Science, and Nutrition. The institute functions as a single administrative body, while the Department of Biochemistry and the School of Nutritional Sciences constitute study programs within the Institute. The Dean's committee that studied and approved the proposal also recommended that the issue of the faculty:student ratio in the Institute be addressed, and that a serious effort be made to enlarge the teaching and research base of the units.

The School currently maintains the most extensive study program in Nutritional Sciences in Israel. In addition to its academic program, the school supports an active research program and maintains collaborative professional relationships with medical centers and

academic institutions in Israel and abroad, with the Ministry of Health, with dieticians in the field, and with the Israel Dietetic Association (ATID).

3.1.2 Mission statement of the study program, its aims and goals

Founded in 1968, the School of Nutritional Sciences of the Hebrew University was the first academic unit in Israel devoted to the study of human nutrition and providing professional training for clinical dieticians. Since its beginnings, the school has strived to integrate knowledge from the physical, biological, medical and social sciences into a program of nutritional education and research ranging from the molecular level to that of the community. The research, teaching, and community outreach activities of the School of Nutritional Science encompass both healthy and diseased populations, and the program is supported by laboratory facilities that serve to introduce students to basic and applied research in the fields of chemistry, biochemistry, physiology, pathology and nutrition. Our ultimate goal is to be the leading institution in the Middle East for training nutrition professionals and carrying out nutritional research.

The study program of the School of Nutritional Sciences of the Hebrew University has two central goals:

- 1) The program is aimed at providing participants with both the theoretical base and the practical knowledge required to work as clinical dieticians able to implement specialized care in hospital and community settings. To this end, the students receive in-depth exposure to a wide spectrum of concepts and principles in scientific fields relevant to nutrition, and are taught the most current approaches to nutritional therapy. Our ultimate goal is to producing a cadre of highly qualified graduates capable of addressing nutritional issues with a high degree of professionalism.
- 2) The program is also aimed at encouraging students to continue their studies in MSc and PhD programs, in order to pursue academic careers or fill leading policy positions in the health care system.

The B. Sc. Program

The program trains graduates in Nutritional Sciences to be tomorrow's clinical dieticians and leaders within the health care system. The academic goal of the school is to enable its graduates to develop professionally and to provide them with the tools to acquire new knowledge in the field. It is our goal that graduates will develop careers in the practice of nutritional science, in research, public health and education, as well as contributing to policy making in the field of human nutrition.

The M.Sc. Program

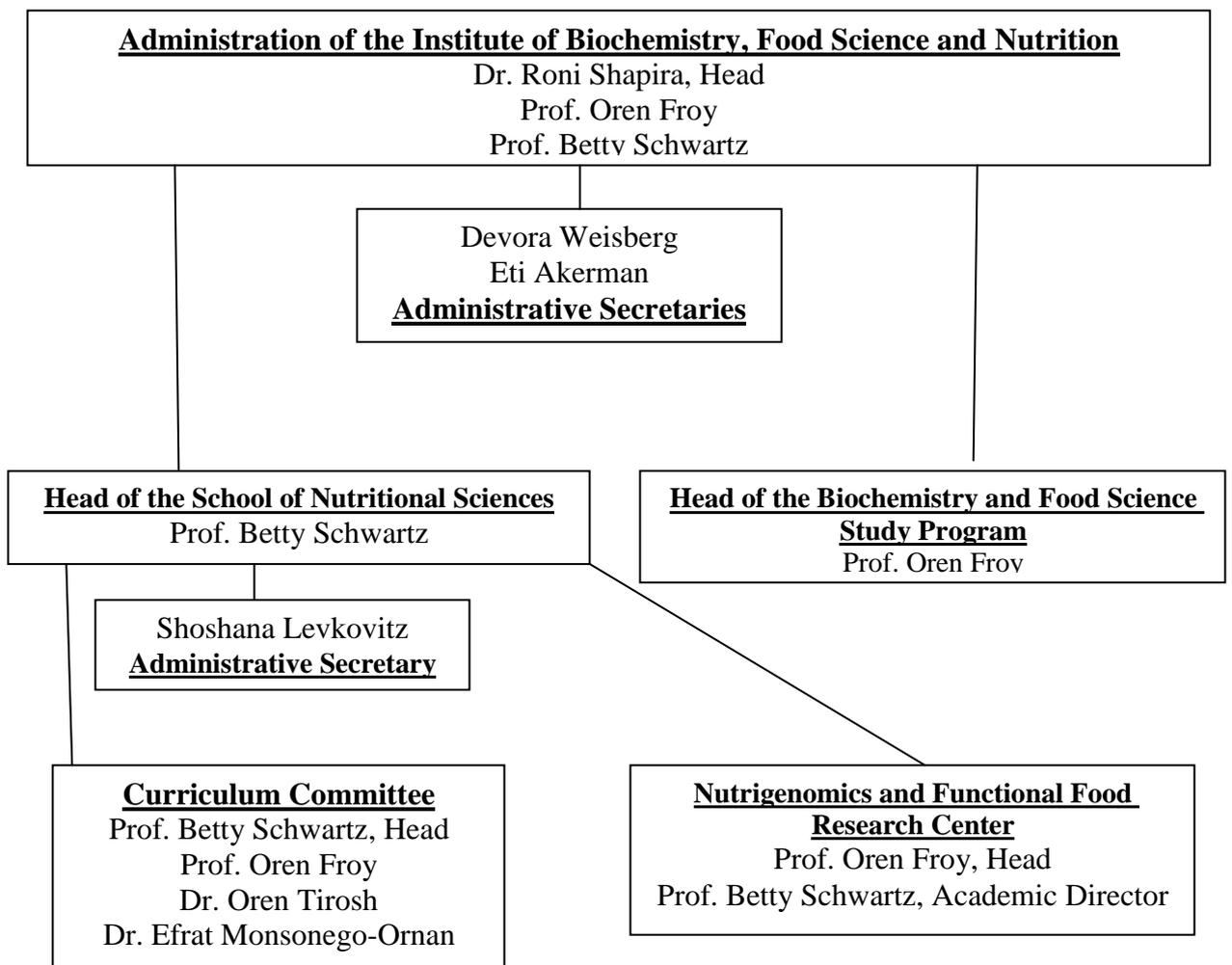
The School of Nutrition offers both thesis and non-thesis MSc programs. The thesis track is designed to train graduate students who combine experience in basic nutritional research with an understanding of its relevance to clinical practice. MSc graduates are

expected to develop careers as leaders in the field of human nutrition in both government and non-government agencies. The program fosters scientific excellence and encourages continuing education in the PhD program.

The PhD Program

In light of the country’s needs for advanced research in the nutritional sciences, and in order to raise the level of such research in Israel, we offer a PhD program to highly qualified applicants. Candidates begin their doctoral studies in one of the research teams in the School, in accordance with their personal interests and projects available. The exceptionally wide range of research in the School, and in the Faculty, provides many opportunities for multidisciplinary studies, enabling doctoral students to plan their study programs to fit their future career goals.

3.1.3. Description and chart of the academic and administrative organizational structure of the study program (including relevant committees)



3.1.4. Names of holders of senior academic and administrative positions.

- Dr. Roni Shapira: Head of the Institute of Biochemistry, Food Science, and Nutrition.
- Prof. Betty Schwartz: Head of the School of Nutritional Sciences
- Prof. Oren Froy: Head of the Biochemistry and Food Science Study Program

3.1.5. Please provide in the format of a table, the number of students enrolled in the program in each of the last five years according to level of degree (first degree, second degree with thesis, second degree without thesis, doctoral degree)

Table 3.1.5. Enrolment in all degree programs of the Hebrew University School of Nutritional Sciences, 2006-2011.

Academic year	BSc	MSc (thesis)	MSc (non-thesis)	PhD
2006-7	227	53	12	8
2007-8	222	52	7	10
2008-9	252	52	3	9
2009-10	271	56	2	6
2010-11	297	43	5	9

3.1.6. Please provide in the format of a table, the number of graduates from the program in each of the last five years according the level of degree (first degree, second degree with thesis, second degree without thesis, doctoral degree).

Table 3.1.6. Number of degrees granted by the Hebrew University School of Nutritional Sciences, from 2005-2010. Numbers in parenthesis indicate degrees granted with Honors.

Academic Year	BSc	MSc (thesis)	MSc (non-thesis)	PhD
2005-6	56 (5)	8 (5)	1	1
2006-7	70 (15)	7 (1)	4	2
2007-8	66 (16)	14 (2)	3	3
2008-9	69 (21)	9 (4)	2	1
2009-10	72 (18)	16 (4)	2	---

3.2. The Study Program – Contents, Structure and Scope

3.2.1. The name of the study program, specializations/tracks within the program, the campus where it is taught (if the institution operates on a number of campuses). If the study program is offered on more than one campus, is the level of the program uniform on different campuses, and what measures are taken in order to ensure this?

The School of Nutritional Sciences administers a study program conferring academic degrees in the field of nutritional sciences. The program has its base at the Faculty of Agriculture, Food and Environmental Sciences, on the Rehovot campus of the Hebrew University. All instruction takes place at this location, with the exception of field trips. The School is also responsible for the academic content of the International MSc Program in Nutritional Sciences, which is administered by the Division of External Studies and grants Master's degrees in both research and non-research tracks. In addition

to these academic programs, the School is involved in a number of outreach projects, three of which are described below:

Community and Global Outreach Projects It is the goal of the School of Nutritional Sciences to provide the next generation of nutritional scientists with the skills not only to understand the etiology of disease and to treat patients, but also to work towards a better world where all people have access to healthy, affordable food. The staff of the School is committed to making this vision a reality. Working in partnership with the local municipality, we have developed and implemented outreach programs in immigrant and underprivileged communities in Israel, in which the university contributes its resources and facilities to provide inclusive nutrition education. In addition, our international programs train professionals from developing countries in order to help improve the nutritional status of populations in their home countries. We believe it is our responsibility to share our knowledge and experience at both local and global levels. Three ongoing outreach programs are described here.

I. Nutrition Education Program for Ethiopian Immigrants- Rehovot, Israel

Background: Health problems directly associated with poor nutrition are prevalent in the new immigrant population from Ethiopia, with preschool children suffering from extensive dental caries and cases of obesity on the rise among youth and adults. A recent survey carried out in the Kiryat Moshe neighborhood of Rehovot showed that women between 20-45 years of age consumed fewer than 2 servings of fruits and vegetables daily (7-9 servings are recommended) and less than one daily serving of dairy products (3 servings are recommended), while consumption of simple sugars was very high; these eating patterns are known to increase the risk of developing diabetes, osteoporosis and heart disease. Exposure to the Western/Israeli diet has led to indiscriminate food choices (sweets, calorie dense “junk food”), and traditional healthy foods are rapidly being abandoned. There have been limited attempts at nutritional education to provide the Ethiopian immigrants with the tools to plan and prepare low-cost meals that are both healthy and tasty.

The hands-on nutrition program was initiated at the beginning of the 2002-2003 academic year by the School of Nutritional Sciences in conjunction with the Rehovot Municipality, the Israel Ministry of Health and neighborhood representatives from Kiryat Moshe. The highly successful first-year pilot project included eighteen third-year undergraduate students from the School; since that time, over two hundred of our graduates have participated in the project. The students have an opportunity to plan, prepare, implement and evaluate Nutrition Education programs in a variety of settings including kindergartens, schools, youth centers, well-baby clinics (young mothers), women’s groups and senior citizen clubs. Emphasis is placed on parent/child activities whenever possible. The university contributes its facilities to the project by allowing interactive healthy cooking sessions to be held on campus in the School’s teaching kitchen, enabling

large groups of adults, teens and mother/child teams to learn about and prepare low-cost healthy dishes.

The program is supervised by university staff and registered dietitians.

Program goals: The outreach program is aimed at providing:

- (a) Basic understanding of healthy nutrition and good eating habits;
- (b) Exposure to the wide variety of healthy foods available in Israel.
- (c) Presentation of methods of food preparation and meals based on nutritional recommendations of the Ministry of Health, while taking into consideration personal and cultural preferences;
- (d) Encouraging participants to apply this knowledge to planning their daily diet, and food preparation in the home. Emphasis is also placed on the health benefits of the traditional Ethiopian diet.

Outcome: The program has proven to be an overwhelming success. It benefits the students by giving them a unique opportunity to work in an underprivileged community and learn about the eating habits and cultural background of the Ethiopian community in Israel, and also provides practical training in community nutrition and public health. The residents of Kiryat Moshe benefit by participating in a series of health- promoting activities provided locally that present accurate and useful information on how to ensure that their families are receiving the essential nutrients needed for optimal growth and development. Culturally sensitive educational interventions have been shown to be very useful in helping immigrant populations in transition to adapt to new dietary habits and make healthy food choices.

The future: It is the intention of the School of Nutritional Sciences to establish a long-term sustainable program based the experience we have gained. The Rehovot Municipality has helped to cover expenses for the project, but there is no guarantee this will continue to be the case. All the work by the students and the School's staff, Prof. Betty Schwartz, Director, and Drs. Eitan Israeli and Aliza Stark, has been voluntary. Teaching assistants are essential to help oversee the planning and implementation of the project, as students must be accompanied by experienced staff members in order to supervise and evaluate their work. Many of the activities involve food preparation; a budget must be available for the purchase of food and maintenance of the university teaching kitchen. In the 2009-10 academic year, over fifty activities were carried out. Part of our vision is to further develop this program to include additional municipalities and expand student participation. If additional resources are available, a framework to include graduate students in our community outreach projects could be established. Sufficient funding must be available for both maintenance and expansion of this project; efforts are underway to obtain this funding.

II. Graduate Training in Nutritional Sciences for Participants from Developing Countries

Background: In light of the limited opportunities for higher education in many developing countries, the Hebrew University has established several programs to provide graduate training for gifted participants from around the world. One of our newer programs is the one-year International Master's Program in Nutritional Sciences, taught in English. The program is conducted under the academic auspices of The School of Nutritional Sciences and is administered by our External Studies Division. The program is run on alternate years, and to date, three groups of students have completed the course of studies. Each group has included 10-15 participants, predominantly from second and third world countries. The program was first offered in the 2005-06 academic year, and the fourth group of students is now completing its studies. Students have the option of finishing their degree in one year with a non-research thesis, or remaining in the country for a second year of research, leading to a thesis degree. From the 2009-10 program, 8 out of 10 students carried out research projects in campus laboratories, working in nutrition epidemiology or in community survey projects.

Program goals: The program aims to provide participants with:

- (a) Graduate level coursework in Nutritional Sciences (public health nutrition, epidemiology, basic nutritional sciences) with rigorous academic standards;
- (b) Up-to-date knowledge on nutrition, and proficiency in the use of relevant information technology;
- (c) Skills in planning, implementing and evaluating nutritional research; and
- (d) Training to fill key positions in nutrition programs in their home countries.

Outcome: The success of our alumni in their home countries and abroad testifies to the high level of the program. A few examples:

- **Kibrom Kidane Tefaselssie – Eritrea.** In 2010, Kib was promoted, and he now holds the position of Nutrition Specialist at the highest level in UNICEF Eritrea.
- **Roselyne Nthenya Makau – Kenya.** Roselyne is currently employed by the Kenya Bureau of Standards as a Certification Officer.
- **Mehari Gebre Tessema – Ethiopia.** Mehari is employed by UNICEF as part of the national level staff in Ethiopia. He works as a community based nutritionist and is a consultant to the Regional Health Bureau dealing with the expansion of nutritional services.
- **Tenagne Delessa Chala – Ethiopia; Prabhat Khanal and Khem Adhikar – Nepal.** All three students completed our two-year program, including a research thesis. Tenagne is currently enrolled in a prestigious PhD program in Switzerland, and Prabhat and Khem have begun their doctoral work in Denmark.

The future: The majority of participants in this program have insufficient financial resources to pay tuition and living expenses. Enrollment is therefore contingent upon receiving financial aid. In order to expand the program, additional fellowships provided by sponsors are required. Furthermore, financial support for second-year students is

greatly needed. Academic supervisors for the second-year research project have until now provided partial or total funding for their students, but this arrangement seriously limits the number of potential mentors. The ability to provide faculty members with monetary incentives to participate in the advanced stage of the training program would be advantageous in that it would decrease the financial burden on the academic supervisors and increase the number of faculty members willing to give of their expertise to mentor international students.

III. The Perach Tutorial Project: Childhood Obesity

Background: The Perach tutoring program was established in 1997 by a group of students from the Weizmann Institute of Science, who took it upon themselves to provide individual tutoring for underprivileged schoolchildren. The program has expanded in scale and in scope, and today approximately 15% of all students in Israel's institutes of higher education take part in the program annually. The program aims to enrich the lives of needy children from all sectors of Israeli society through a close relationship with a Perach mentor; to help college students meet the costs of higher education by providing partial scholarships or academic credit in return for their work as mentors; to narrow the social and economic gaps existing in Israeli society; and to foster understanding and tolerance among different sectors of society through joint activities.

The Perach Nutrition Project was proposed in 2007 by three first-year students of nutrition. Professor Betty Schwartz undertook to develop the idea as a pilot program, establishing a logistic and financial collaboration between the School of Nutritional Sciences, which provides student mentors and the use of various campus facilities, the Meuhedet Healthcare Fund, which supplies dieticians for the program and covers the cost of treatment, and Perach, which is the source of scholarships for the participating students. In the wake of the one-year pilot, the program has developed and constitutes an integral part of the tutoring program. Participating students are registered for a seminar project as part of their study program, and fulfill all of the relevant requirements through their participation in the Perach project.

Project goals: The central goal of the project is to provide personal mentoring for children who are in the process of weight loss. The mentor participates by providing help with the nutritional and social aspects of the process, spending 4 hours per week with the child both at home and, once every two weeks, on regular visits with the child and parents to the dietician. While the student mentors do not in any way take the place of the professional dietician, they can offer insight into the child's home environment. The target population for the project is defined as healthy children, aged 6-11, with borderline biochemical indices, who are overweight according to standard growth curves. The project encompasses 60 two-hour meetings, twice weekly.

Activities for mentors:

1. The students attend a number of one-day orientation sessions before the project begins, during which they meet with Dr. Sara Kaplan, the head dietician of the Meuhedet Healthcare Fund and of the project, and with a fitness coach.
2. During the course of the project, the mentors meet regularly with a representative of Perach, in order to discuss social aspects of their work. Periodic meetings are held with Dr. Kaplan, Prof. Betty Schwartz of the School of Nutritional Sciences, and Amir Bein, one of the student founders of the project, in order to monitor progress and provide feedback.
3. The mentors meet regularly with psychologist Dr. Sari Aloni, who provides guidance in working with children and tools to cope with problems that arise during the course of the project.

Semi-weekly meetings: The meetings with the children include individual and group fitness activities such as bicycle riding, rollerblading, Frisbee and ball games; the Faculty has contributed the use of its sports hall for this purpose. Nutrition-related activities include shopping trips to a local supermarket, where the children learn through experience to choose healthy foods, and playing games based on food-related subjects. The children and mentors also attend general Perach activities such as field trips, movies, and birthday parties.

Additional get-togethers with parents and children include a cooking evening and exercise sessions. The parents participate in a workshop conducted by dieticians from the Meuhedet Health Fund, the cost of which is covered by the health fund thanks to Dr. Kaplan's involvement in the program, and by Dr. Sari Aloni.

Outcomes: Feedback from both student mentors and parents has been overwhelmingly positive. Students see participation in the project as a unique hands-on experience and feel that they have had a positive effect on the lives of the children and their families. Parents report close involvement of the entire family in the experiences of the participating children and greater understanding of the importance of good nutrition and physical fitness.

Weight loss was observed among many of the children and in some cases an improvement in biochemical indices (blood glucose/cholesterol/triglycerides) was reported. Overall BMI was not significantly changed, but this is common in weight control programs with growing children. Meaningful improvements in dietary and exercise habits were observed.

The participating students presented their conclusions at a one-day conference attended by the head of the School, students, faculty advisors, and professional dieticians.

The future: It is our intent to expand the project to other regions of the country and to include as mentors not only students of nutritional sciences but those studying other paramedical professions, as well. We would like to widen the scope of the fitness activities and introduce additional teaching materials. Ideally, participation in the project would give academic credit to the mentors in addition to the credits they receive for the seminar project itself, in light of their large investment in mentoring, seminar days, and field experience.

3.2.2. Please provide in the format of Table 1 (page 14) the structure of the study program its content, and scope (years of study, semesters, hours per year and credits) and the distribution of the studies throughout the academic year. Does the study program supply courses to other units within the institution?

Tables 3.2.2A-C summarize the content and structure of the BSc and MSc study programs administered by the School of Nutritional Sciences. **Table 3.2.2.A** summarizes the required courses included in the undergraduate program, and **Table 3.2.2.B** presents the elective and enrichment courses offered to undergraduate students. **Table 3.2.2.C** provides a summary of graduate level courses.

The Institute provides biochemistry and chemistry courses for all relevant study programs in the Faculty. The School of Nutritional Sciences is also responsible for the academic content of the International MSc program in Nutritional Sciences, which is administered by the Division of External Studies. **Table 3.2.2D** presents a summary of the courses offered in the framework of this program.

The BSc Study Program

Studies towards a BSc degree are based on a 6-semester program of required, elective and enrichment courses. Graduation from the program with a BSc in Nutritional Sciences requires the successful completion of a minimum 150 credit hours, of which 123.5 credit hours arise from required courses, as shown below. The distribution of required courses over the three-year program is as follows:

Semester	Required credit hours		
	Year I	Year II	Year III
1	24	25.5	17.5
2	27	23	16.5
Total	51	48.5	34

The remaining credits may be chosen by the student from the list of elective courses shown in Table 3.2.2.B. The student may also include 2 credit hours derived from enrichment courses (Table 3.2.2.B) as part of the elective credits, and the study committee recommends that each student participate in at least one General Studies core course, also listed in Table 3.2.2.B.

Students who have been granted a BSc degree in Nutritional Sciences are eligible to continue their professional training by participating in the Clinical Nutrition Internship Program administered by the Israel Ministry of Health. The academic requirements for acceptance into the internship program include a minimum weighted BSc grade average of 70, and a minimum final grade of 70 in courses 65320 and 65322 (Dietetics I and II). Participants who complete the internship are licensed by the Ministry of Health to practice as clinical nutritionists.

The MSc Study Program

The School of Nutritional Sciences offers an MSc study program based on nutritional research and clinical nutrition. Each student constructs a personal program of courses, in consultation with the thesis advisor and according to the student's individual interests. Each MSc student in the thesis track is required to complete 20 credit hours of coursework from among the courses offered by the School (Table 3.2.2.C), in addition to required seminar courses.

Students in the non-thesis track must complete 40 credit hours of coursework chosen from the courses offered by the School, in addition to required seminars. The seminar presented by non-thesis MSc students concentrates on clinically-oriented issues in nutrition. The seminar is submitted in writing and presented as a lecture, and some students are asked to do a small scale research exercise in the form of a short intervention in a clinical case. The seminar is usually prepared under the supervision of a physician, dietician, or psychologist working in conjunction with the School, and a faculty member. In the past, graduates of the BSc program have been required to work for four years in the field of nutrition before applying to the non-thesis MSc program; this requirement has been eliminated as of the coming academic year.

Course 73528 (Statistics for Clinical and Nutritional Studies) is a requirement for all MSc students in the School of Nutritional Sciences. In addition, all MSc students conducting research involving laboratory animals are required to participate in Course 94810 (The Ethical Use of Laboratory Animals).

Table 3.2.2.A – The B.Sc. Study Program: Required Courses
Academic Year of Evaluation - 2010-11

Semester	Course Title	Course Type (req./elective/ seminar/other)	No. of Credits	Prerequisites for Admission	Weekly Teaching Hours	Weekly Exercise Hours	Weekly Laboratory Hours	No. of Students	Teaching Staff	
									Name of staff member	Employment Degree
1st year										
1	65101 Introduction to the Nutrition Profession	Required workshop	1	None	1	--	--	97	G. Alderoti	Adjunct
1	65210 Human Histology and Anatomy	Required	2	71078	2	--	--	162	A. Kliper	Adjunct
1	71013 Fundamental Statistics	Required	3	None	2	1	--	378	Y. Yosef - Pozansky	Adjunct
1	71054 Calculus I	Required	3	None	2	1	--	88	V. Ostopenko	Adjunct
1	71066 Organic Chemistry I	Required	3	None	2.5	1	--	424	Y. Bilkis	Teaching track
1	71073 Chemical Principles – laboratory 71074	Required	2	71074 or 65022	--	--	3.0	373	M. Fichman	Teaching track
1	71074 Chemical Principles	Required	3.5	None	5	2	--	380	M. Fichman	Teaching track

Semester	Course Title	Course Type (req./elective/ seminar/other)	No. of Credits	Prerequisites for Admission	Weekly Teaching Hours	Weekly Exercise Hours	Weekly Laboratory Hours	No. of Students	Teaching Staff	
									Name of staff member	Employment Degree
1	71078 Cell Biology	Required	3	None	3.0	--	--	407	M. Moshelion	Senior Academic
2	65211 Human Physiology	Required	4	71078; 71080 or 65210	4	--	--	151	B. Schwartz	Senior Academic
2	65217 Introduction to Psychology	Required	2	None	2	--	--	112	A. Berger	Adjunct
2	71026 Statistical Principles in Experimental Design	Required	4	71013	2	1	--	333	I. Levin	Teaching track
2	71051 (English – Level 1)	Placement	0	None	2	--	--	118	M. Cernis R. Goren	Teaching track
2	71052 (English – Level 2)	Placement	0	None	2	--	--	86	R Goren Y. Kramer	Teaching track
2	71060 Physics for Life Sciences	Required	6	None	4	2	--	323	H. Kalbermann	Teaching track
2	71067 Organic Chemistry II	Required	4	65022 or 71074	2	1	--	466	Y. Bilkis	Teaching track
2	71080 Biochemistry	Required	5	71066; 65022 or 71074	4	3	--	436	O. Froy O. Schinberg	Senior Academic Adjunct
2	71081 Biochemistry Laboratory	Required	2	71080	--	--	4	368	O. Tirosh	Senior Academic
2nd year										
1	65125 Human Endocrinology	Required	2	65214	2	--	--	93	B. Schwartz E. Monsonego-Ornan	Senior Academic Junior Academic
1	65213 Human Nutrition - laboratory	Required	3	71081, 65214	--	--	3	84	B. Schwartz	Senior Academic

Semester	Course Title	Course Type (req./elective/ seminar/other)	No. of Credits	Prerequisites for Admission	Weekly Teaching Hours	Weekly Exercise Hours	Weekly Laboratory Hours	No. of Students	Teaching Staff	
									Name of staff member	Employment Degree
1	65214 Human Nutrition	Required	5	65210 or 65218; 65211, 71080, or 71081	5	2	--	132	O. Tirosh	Senior Academic
									O. Froy	Senior Academic
									Y. Cheled	Adjunct
									A. Aronis	Adjunct
1	65219 Human Anatomy and Physiology - Lab	Required	1.5	6521 or 65218	--	---	3	93	B. Schwartz	Senior Academic
1,2	65310 Theory of Interview I	Required	2.5	None	2	--	--	86	A. Berger	Adjunct
1	65311 Developmental Psychology I	Required	2	65217	2	--	--	87	S. Aloni	Adjunct
1	71012 Fundamental Genetics	Required	5	71078 or 71079	4	1	--	305	D. Zamir	Senior Academic
1	71044 Plant Biology	Required	3	71078	2	--	3	204	M. Moshelion	Senior Academic
1	71065 Introduction to Molecular Biology	Required	3	71080	2	1	--	309	S. Morin	Senior Academic
									A. Weinstein	Senior Academic
2	65122 The Physiological and Clinical Importance of Vitamins	Required	2	65218 or 71080; 65214	1	1	--	120	A. Aronis	Adjunct
2	65127 Food Preparation	Required	4	65214	1	--	4	82	A. Stark	Teaching track
2	65128 Food Science	Required	2	65214	2	--	--	90	A. Stark	Teaching track
2	65129 Trace Elements	Required	2	71080, 65214	2	--	--	136	A. Aronis	Adjunct
2	65307 Disease: Pathology and Clinical Manifestations I	Required	3	65211, 65214	3	--	--	84	R. Riefen	Senior Academic
									B. Katz-Porat	Adjunct
									O. Eisenberg	Adjunct
									T. Sinai	Adjunct

Semester	Course Title	Course Type (req./elective/seminar/other)	No. of Credits	Prerequisites for Admission	Weekly Teaching Hours	Weekly Exercise Hours	Weekly Laboratory Hours	No. of Students	Teaching Staff	
									Name of staff member	Employment Degree
2	65312 Developmental Psychology II	Required	2	65311	2	--	--	86	S. Aloni	Adjunct
2	65313 Introduction to Epidemiology	Required	2.5	65214, 71026	2	1	--	91	I. Feldblum	Adjunct
2	71056 General Microbiology	Required	4	71080	2	--	4	313	E Yurkevitch	Senior Academic
									Y. Hellman	Junior Academic
3rd year										
1	65308 Disease: Pathology and Clinical Manifestations II	Required Elective	2	65307	2	--	--	101	R. Reifen	Senior Academic
1,2	65315 Interview Theory II	Required	1.5	65311	2	1	--	55	A. Berger	Adjunct
1	65320 Dietetics I	Required	3	71080 65214	3	--	--	105	E. Monsonego-Ornan	Junior Academic
									A Stark	Teaching track
1	65321 Practical Dietetics I	Required	3	71080 65214	3	--	--	104	E. Monsonego-Ornan	Junior Academic
1	65612 Theory of Food Sensing	Required	1	--	2	--	--	113	M. Niv	Junior Academic
1	65617 Nutritional and Health Survey Methods	Required	1	--	2	--	--	100	F. Stern	Adjunct
									Y. Kachal	Adjunct
1	65618 Public Health	Required	2	65313 65220	2	--	--	104	N. Basudo-Manor	Adjunct
1	65642 Community Nutrition	Required	2	65214	1	1	--	94	A. Stark	Teaching track
1	71436 Proseminar: Food and Nutrition	Required	1	None	--	2	--	131	M. Fichman	Teaching track

Semester	Course Title	Course Type (req./elective/ seminar/other)	No. of Credits	Prerequisites for Admission	Weekly Teaching Hours	Weekly Exercise Hours	Weekly Laboratory Hours	No. of Students	Teaching Staff	
									Name of staff member	Employment Degree
2	65322 Dietetics II	Required	3	65320	3	--	--	108	E. Monsonego-Ornan	Junior Academic
									A. Stark	Teaching track
									S. Aroch	Adjunct
									T. Sinai	Adjunct
1,2	65323 Practical Dietetics II	Required	3	65321 65322	3	--	--	103	E. Monsonego-Ornan	Junior Academic
2	65614 Nutrition Seminar	Required seminar	1	65210, 65211, 65214, 65220, 65320, 71026	--	2	--	102	A. Stark	Teaching track
2	65646 Approaches in the Treatment of Eating Disorders	Required	3	65311	3	--	--	94	M. Yisraeli	Adjunct
2	71413 Food Microbiology and Hygiene	Required	3	71056, 65214, 71080	3	--	--	137	R. Shapira	Senior Academic
2	71478 Principles in Toxicology and Pharmacology	Required	2	65214, 71839, 71080	2	--	--	150	O. Tirosh	Senior Academic
									M. Niv	Junior academic
1 / 2	71251 Introduction to the History and Philosophy of Science	Required	2	None	2	--	--	158/152	A. Kravitz	Adjunct

Table 3.2.2.B - The B.Sc. Study Program- Elective Courses

Semeste	Course Title	Course Type (req./elective/ seminar/other)	No. of Credits	Prerequisites for Admission	Weekly Teaching Hours	Weekly Exercise Hours	Weekly Laboratory Hours	No. of Students	Teaching Staff	
									Name of staff member	Employment Degree
1	65314 Metabolic Aspects of Physical Activity	Elective	2	71080; 65211 or 65220	2	--	--	87	Dr. A. Koral	Junior academic
1	65638 Growth and Development	Elective	2	65214, 65218, 65220	2	--	--	16	Prof. Z. Tzadik	Senior academic
1,2	65639 Nutritional Education Programs	Elective	2.5	65214	2	1	--	22	A. Stark	Teaching track
1	65645 Basic Principles in Physical Activity and Fitness	Elective	3	none	2	--	--	108	A. Koral B. Canaan	Junior academic
1	71428 Food Analysis	Elective	2	71067,71080	2	--	--	58	Z. Kerem	Senior Academic
1	71445 Introduction to Food Science: Principles and Processes	Elective	2	71080	2	--	--	40	Y. Haba	Adjunct
1	71472 Food Legislation and Standardization	Elective	2	none	2	--	--	86	A. Tzirlin	Adjunct
1	13085 Utopia, Nation and Race: Holocaust and Genocide	Enrichment	2	none	2	--	--	81	D. Baltman	Senior Academic

Semeste	Course Title	Course Type (req./elective/ seminar/other)	No. of Credits	Prerequisites for Admission	Weekly Teaching Hours	Weekly Exercise Hours	Weekly Laboratory Hours	No. of Students	Teaching Staff	
									Name of staff member	Employment Degree
2	65302 Eating habits: the Socio- Cultural Context	Elective	2	none	2	--	--	31	L. Givon-Rosberg	Adjunct
2	65637 Human Nutrition: Physiological-Clinical Aspects	Elective	2	65307	2	--	--	87	R. Reifen	Senior Academic
2	65644 Natural Plant Materials in Human Nutrition and Health	Elective	2	71080		--	--	102	Z. Yaniv-Bachrach	Adjunct
2	71092 Introduction to Evolution	Elective	2.5	71012	2	1	--	37	A. Freidman	Senior academic
2	71428 Food Analysis	Elective	2	71428	2	--	--	58	Z. Kerem	Senior academic
2	71707 The Computer and Data Processing	Elective	3	71013 <u>or</u> 71723	3	--	--	28	H. Voet	Teaching track
2	71726 Consumer Behavior	Elective	2	71733	2	--	--	33	L. Mikolitzky	Adjunct
2	71810 Introduction to Endocrinology	Elective	5	71080; 65220 or 71801	5	--	--	175	Prof. B. Robinzon	Senior academic
2	71830 Introduction to Neurobiology	Elective	2	65220 or 71801	2	--	--	39	Dr. N. Meiri	Adjunct
2	71298 From Rural Society to Industrial Society	Enrichment	2	none	2	--	--	90	O.Heilbrunner	Adjunct
2	71273 Civilization	Enrichment	2	none	2	--	--	95	O. Heilbrunner	Adjunct

Table 3.2.2.C - The Graduate Study Program: Course Offerings

Semester	Course Title	Course Type (req./elective/ seminar/other)	No. of Credits	Prerequisites for Admission	Weekly Teaching Hours	Weekly Exercise Hours	Weekly Laboratory Hours	No. of Students	Teaching Staff	
									Name of staff mem	Employment Degree
1	71135 Seminar in Nutritional Sciences	Required seminar	1	None	2	--	--	17	A. Stark	Teaching track
1	71162 Neurobiology of Feeding		2	B.Sc.	2	--	--	30	O. Froy	Senior academic
1	71172 The Basis of Eating Disorders		3	65214 and 65312	2	--	--	6	M. Golan	Adjunct
1	71508 Pediatric Nutrition		2	65320 and 65322	2	--	--	19	R. Reifen	Senior academic
1	71943 Exercise Biology and Physiology		3	None	2	2	--	15	N. Constantini	Adjunct
									G. Dubnov-Raz	Adjunct
1	73507 Damage Caused by Moulds in Foods		2	None	2	--	--		N. Paster	Senior academic
1	73542 Geriatric Nutrition		3	65322	3	--	--	26	A. Shahar	Adjunct
									D. Shahar	Adjunct
1	71931 Food Allergies	Workshop	2	None	2	--	--	13	A. Dariel	Adjunct

Semester	Course Title	Course Type (req./elective/ seminar/other)	No. of Credits	Prerequisites for Admission	Weekly Teaching Hours	Weekly Exercise Hours	Weekly Laboratory Hours	No. of Students	Teaching Staff	
									Name of staff mem	Employment Degree
2	73528 Statistics for Clinical and Nutritional Studies		2	None	2	--	--	22	H. Voet	Teaching track
2	73546 Antioxidants and Free Radicals in Biology		2	71080 and 71074 and 71078	2	--	--	39	O. Tirosh	Senior academic

Graduate level courses not offered during 2010-2011: The following courses were not taught during the academic year of the evaluation, either because they are offered in alternate years, or because they have been temporarily suspended from the program in the wake of budget reductions for the employment of adjunct teaching staff.

- 71119 - Signal Transduction Pathways (E. Monsonego-Ornan)
- 71901 - Biochemistry of Proteins and Enzymes (C. Abliovitch)
- 71902 - Biochemistry of Proteins and Enzymes – Laboratory (C. Abliovitch)
- 71904 – Exercise in Biochemistry of Proteins and Enzymes (C. Abliovitch)
- 71925 - Biochemistry and Physiology of Human Nutrition (Z. Madar)
- 71149 - Metabolic Regulation Pathways (A. Troen)
- 71934 - Control of Cell Protein Degradation (C. Abliovitch)
- 73500 –Dietary Risk Factors and the Cardiovascular System (A. Azoulay)
- 73523 – Interaction between Nutrients and Genes (B. Schwartz)
- 73524 – Nutritional Epidemiology (A. Feldblum)
- 73529 –Evaluating Nutritional Education in the Community (E. Israeli)
- 73551 – Pediatric Endocrinology: Nutritional Aspects (T. Tzadik)

Table 3.2.2.D - The International M.Sc. Program in Nutritional Sciences

The coursework of the one-year International MSc Program is distributed over three semesters: the fall semester (1), from October –February, the spring semester (2), from March – June, and the summer semester (3), from July- October. The language of instruction is English.

Semester	Course Title	Course Type (req./elective/ seminar/other)	No.of Credits	Prerequisites for Admission	Weekly TeachingH ours	Weekly Exercise Hours	No. of Students	Teaching Staff	
								Name of staff member	Employment Degree
1	73903 Introduction to Molecular Biology	Required	3	--	3	--	16-18	H. Czosnek	Senior academic
1	73951 Introductory Nutrition	Required	3	--	2	1	10-15	A. Stark	Teaching track
1	73955 Selected Topics in Biochemistry	Required	4	--	3	1	16-18	O. Froy	Senior academic
1	73956 Maternal & Child Nutrition	Required	3	--	3	-	0	S. Iron-Segev	Adjunct
1	73964 Food Safety	Required	3	--	3	--	10	Z. Gershon	Adjunct
2	71105 Development of Critical Thinking	Elective	2	--	3	--	30	M. Cernis	Teaching track
2	73810 Basic Immunology	Required	2	73955	2	--	16-18	A. Friedman	Senior academic

Semester	Course Title	Course Type (req./elective/ seminar/other)	No. of Credits	Prerequisites for Admission	Weekly Teaching Hours	Weekly Exercise Hours	No. of Students	Teaching Staff	
								Name of staff member	Employment Degree
2	73950 Public Health	Required	3		3	--	10	R. Goldsmith	Adjunct
2	73953 Nutrient-Gene Interactions	Required	2	73903 73955	2	--	10	Schwartz	Senior academic
2	73961 Nutrition and Aging	Elective	2	73951	2	--	5 or more	A. Shahar O. Stone	Adjunct
2	73962 Positive Microbiology	Elective	1		1	--	5 or more	R. Shapira	Senior academic
2	73963 Food Quality Management	Elective	3	73964	3	--	5 or more	Z. Gershon	Adjunct
2	73976 Topics in Clinical Nutrition	Required	2	73951	2	--	10	R. Inbar	Adjunct
2	73980 Neurobiology of Feeding	Elective	2	73955	2	--	5 or more	O. Froy	Senior academic
3	73967 Vitamins and Minerals	Required	2	73955	2	--	10	A. Aronis	Adjunct
3	73971 Hormones and Nutrition	Elective	2	73955	2	--	5 or more	Z. Zadik	Adjunct
3	73972 Research Project	Required	6	--		--	10	B. Schwartz A. Stark	Senior academic Teaching track
3	73973 Seminar in Nutritional Sciences	Required	2	--	2	--	10	A. Stark	Teaching track

Semester	Course Title	Course Type (req./elective/ seminar/other)	No.of Credits	Prerequisites for Admission	Weekly TeachingH s	Weekly Exercise Hours	No. of Students	Teaching Staff	
								Name of staff member	Employment Degree
3	73978 Malnutrition and its Management	Required	1	73951	3	--	10	M. Karwinkel	Visiting Scholar, Univ. of Giessen, Germany
3	73979 Nutritional Insecurity and its Prevention	Required	1	73951	3	--	10	M. Karwinkel	Visiting Scholar, Univ. of Giessen, Germany

3.2.3. Specify what bodies are responsible for the planning and managing of the study program. What are the mechanisms responsible for introducing changes and updating the study program, and how do they operate. If fundamental changes have been introduced into the study program during the last five years, please specify what they are.

The curriculum committee meets at least once a month in order to evaluate the progress of the study program. At the close of each semester, the head of the school conducts a debriefing session with the School's students and receives feedback from them on every course offered that semester. The administration of the Institute, the curriculum committee, and instructors convene at the end of each semester with the purpose of evaluating the content of the study program, and this forum also meets 2-3 times during the summer recess with the purpose of examining the entire program. This forum receives suggestions for changes in the program; as a result, the study program has undergone extensive changes during the past 5 years.

Two years ago, a Faculty-wide decision was made to reduce the number of credit hours in all undergraduate programs, in order to enhance the depth of courses studied. The School of Nutritional Sciences was the first unit to implement this decision, reducing the total number of credit hours in the BSc program from 165 to 150. Since the study program includes required courses in areas such as psychology, developmental psychology, education, and interviewing techniques, the Cornerstone courses offered by the university have been adopted by the School to only a limited extent.

Specific changes introduced into the study program in the last 5 years are as follows:

1. The course in Human Anatomy and Physiology (65218 + 65220) was split into two courses, both taught in the first year of the program: **Human Histology and Anatomy (65212)** (first semester), and **Human Physiology (65211)** (second semester).
2. The course in Human Nutrition (65214) previously included study units on vitamins and minerals which were judged insufficient to keep pace with research developments in these fields. These units were removed from the Human Nutrition course, and two separate courses were developed in their place: **The Physiological and Clinical Importance of Vitamins (65122)**, and **Trace Elements (65129)**.
3. Two courses on eating behavior were added to the program: **Eating Habits: the Socio-Cultural Context (65302)** and **Approaches in the Treatment of Eating Disorders (65646)**.
4. A course in **Physics for Life Sciences (71060)**, intended specifically for students of biological science was introduced in place of the previously required non-majors physics course, which was less comprehensive.

5. The course titled **Community Nutrition** (65642) underwent major modifications and now constitutes the central course covering topics of lifelong nutrition in healthy populations.
6. An important required course in **Principles in Toxicology and Pharmacology (71478)** was added to the program. The course covers interactions between medicines and foods, and discusses toxins that can develop in foods.
7. A required course in **Human Endocrinology (65125)**, which focuses on the topic of hormones related to human nutrition and related areas, was added to the study program.
8. A required course in **Theory of Food Sensing (65612)** was added to the course list.
9. A required course in **Clinical Immunology (65710)** was introduced to the program. The course is provided by the Department of Animal Science.
10. A new course in **Neuroendocrinology of Human Nutrition (65324)**, based on the material on feeding behavior that was previously part of the required course in Human Nutrition, will be added to the study program as of the 2011-12 academic year.
11. **Human Nutrition: Physiological-Clinical Aspects (65637)** was reduced from 3 credit hours to 2, and was changed from required to elective status.
12. **Novel Perspectives in Nutritional and Food Research (71479)** is a new required third -year course, aimed at exposing the students to the most up to date research conducted by the academic staff of the School of Nutritional Sciences and Department of Biochemistry and Food Sciences. It will become a part of the study program in 2011-12.
13. The two graduate workshops (71931) taught during the first semester of the program have become two separate 2-credit required courses: **Food Allergies**, which was offered during the 2010-11 academic year, and **Diagnostic Cytology**, which will be taught during 2011-12.

The following courses were removed from the study program due to lack of funds for employing qualified adjunct instructors:

1. Clinical Experience in Nutrition (65301)
2. Clinical Pathological Experience (65613)
3. Clinical Evaluation (65643)
4. Interpersonal Communication (71208)
5. Kashrut and Shabbat (65216)

3.2.4. Describe the mechanism for coordinating and examining the contents that are, in fact, being taught, if such a mechanism exists.

Responsibility for the planning and management of the program of study lies with the head of the School of Nutritional Sciences, who is assisted in this task by the curriculum

committee. 6 – 8 meetings are held in the course of the academic year with the following in mind:

- The curriculum committee and the head of the school are responsible for monitoring actual content of all courses taught in the School of Nutritional Sciences. The committee may approve new courses and programs, major changes in, or updates of, existing courses, and other major changes in curriculum.
- The general goals of the program are discussed in light of local and international advances in the field of nutrition. Policy, administrative and academic issues raised by other committees are also considered.
- They discuss common content, and the progression of theoretical and practical material throughout the study program.

In addition, each course instructor or coordinator conducts takes responsibility for the day to day management of their courses. The curriculum is discussed in faculty meetings when deemed necessary. In general, modifications in the program can be suggested by faculty members at any level.

Basic faculty-level courses are developed and implemented by their respective departments at the Faculty of Agriculture, and other university departments. They are offered as a service to the School in coordination with the School's administration, and are monitored as described above.

3.2.5. Are additional non-academic bodies involved in the running and the activities of the parent unit and study program? If so, what are these bodies and what is the mutual relationship between them and the leadership of the parent unit (for instance, the mutual relationship between the Business School and the Manufacturers' Association or Industrial Factories)?

While no non-academic bodies are directly involved in the running and/or activities of the Institute of Biochemistry, Nutrition, and Food Science or the School of Nutritional Sciences, the Ministry of Health is responsible for coordinating internships for students who have completed their studies in nutritional sciences. The internship coordinator presents an annual lecture at the School. Academic conferences in the field of nutrition have been organized in the past as a joint effort between the School of Nutritional Sciences and the Israel Dietetic Association (ATID).

3.2.6. What are the future development plans of the evaluated study program, and how were they decided upon?

Among the many new directions that the School would like to explore in the study program, two areas have been developed and presented to the University for consideration:

Study Program in Nutrigenetics and Nutrigenomics – The success of the Human Genome Project has provided the scientific community with a wealth of information about the

structure of the genome; this information can be used to study interactions between our genes and environmental factors such as nutrition, and their effect upon health and disease. The novel research fields emerging from these new challenges are referred to as nutrigenomics and nutrigenetics.

The recognition of nutrients' ability to interact and modulate the molecular mechanisms underlying an organism's physiology has prompted a revolution in the field of nutrition. The creation of nutrigenomics and nutrigenetics, two fields with distinct approaches to elucidating the interaction between diet and genes, but with the common ultimate goal of optimizing health through the personalization of diet, provide powerful tools for unraveling the complex relationship between nutritional molecules, genetic polymorphisms, and the biological system as a whole.

Future plans for the study program included the addition of courses on nutrigenetics and nutrigenomics. This decision was made at the end of the 2009-10 academic year by the study committee, which was extended for this purpose to include the administration of the Institute. Implementation of the decision is dependent upon the hiring of new faculty members with expertise in these fields.

MSc in Sports Nutrition - This study program, proposed by Prof. Betty Schwartz and Dr. Naama Constantini, is an interdisciplinary program to be administered jointly by the Faculty of Agriculture, Food and Environment and the Faculty of Medicine, leading to an MSc degree. The program aims to provide students with the theoretical, basic and practical tools to understand the connection between nutrition and physical activity as components of a healthy lifestyle and as a method of disease prevention and treatment. The program will include in-depth coverage of topics such as stress physiology, physical fitness, and the nutritional requirements of athletes and the physically active population.

Candidates holding a BSc in Nutritional Sciences or Clinical Nutrition with a minimum cumulative grade average of 85 will be eligible to apply to the program. 20 candidates will be accepted into the program each year, chosen according to academic credentials and, if deemed necessary, a personal interview. Each student will be assigned a research topic and a faculty advisor.

Requirements will include a research project and coursework. Courses specific to the program (see list below) will make up half of the required 32 credit hours. 8 additional credits will be filled by MSc courses offered by the School of Nutritional Sciences, and the remaining 8 credits will be selected from the courses offered by the Faculty of Medicine.

The program will be supervised by two faculty members: the Head of the School of Nutritional Sciences in Rehovot, and the Head of the Center for Sports Medicine at Hadassah Hospital in Jerusalem. Each student's individual study program will require approval by both supervisors.

Courses in Sports Nutrition (16 credit hours)

- Medical and Endocrine Aspects of Physical Activity in Children (2 credits)
- Physical Activity and Nutrition for the Aged (2 credits)
- Energy Balance and Body Composition (2 credits)
- Physical Activity and Disease (2 credits)
- Nutritional Additives in Sports (2 credits)
- Medical and Nutritional Aspects of Exercise for Women (2 credits)
- Stress Physiology: Theory and Practice (3 credits)
- Theoretical and Practical Principles of Physical Fitness and Exercise (2 credits)

Courses in Nutritional Science (8 credit hours)

- Trace Elements (2 credits)
- Obesity and Eating Disorders (3 credits)
- The Biochemistry and Physiology of Human Nutrition (2 credits)
- Interactions between Nutrition and Gene Expression (2 credits)
- Statistics for Nutritional and Clinical Experiments (1 credit)
- Nutrition and Aging (3 credits)
- Vitamins: Function and Activity (2 credits)
- Antioxidants and Free Radicals in Biology (2 credits)
- Seminar (2 credits)
- Heredity, Environment and Physical Capabilities (2 credits)

Courses in Sports Medicine (8 credit hours)

- The Biology and Physiology of Physical Exertion (2 credits)
- Bioenergetics, Biochemistry and Metabolism
- Metabolic and Physiological Biochemistry (7 credits)
- Stress Metabolism and Human Nutrition (4 credits)
- Interdepartmental Seminar – Human Nutrition and Endocrinology (1 credit)
- Human Endocrinology (3 credits)
- Methodology of Metabolic Research
- Survey and Research Methods in Public Health (3 credits)

3.2.7. In summary, to what extent has the program achieved its mission and goals? What are its strengths and weakness?

Strengths: The Hebrew University is an institution of higher education and, at the same time, a respected, prestigious research institute. The deep involvement of faculty members in current research in their individual fields has a profound influence on the level of instruction in the School of Nutritional Sciences, and in the university as a whole. Courses taught by teachers with access to the most current information in the field of study are fundamentally different from “textbook” courses, both in content and in their ability to motivate and inspire students. The students, on their part, can only benefit from exposure to the world of research as a routine aspect of instruction.

The stringent entrance requirements for acceptance to the program also contribute to the strength of the School of Nutrition: the strong academic level of our student body helps guarantee the professional level of our graduates as they complete their studies and begin to build careers in the field of human nutrition.

The location of the School of Nutritional Sciences on the campus of the Faculty of Agriculture, Food, and the Environment contributes greatly to the strength of the study program. The basic connection between agriculture and human nutrition is self-evident, and our students gain a wider perspective on many global nutritional issues as a result of their access to courses in the agricultural sciences which are taught at the Faculty. On a more general level, the fact that the School of Nutritional Sciences is part of a larger academic institution greatly enriches the learning environment and serves to expose students to a wide range of concepts and scientific approaches characteristic of an academic environment.

Weaknesses: The major weakness of the program lies in the very small number of full-time academic staff in the school, a total of seven, while student enrollment approaches 350. This ratio of 50 students per faculty member is one of the highest student:teacher ratios in the entire Hebrew University. In order to fulfill the requisites of the study program and provide our students with the up-to-date knowledge needed for professional excellence, we are dependent upon some 40 external instructors, including volunteers, which creates a problematic situation in which regulation of the program is extremely difficult.

While dependence upon external instructors is problematic, an even greater difficulty has arisen in the past year, when funding for employment of such instructors was drastically reduced. This has led to the suspension or cancellation of a number of courses and has further increased the workload of the School's faculty members. As a direct result, the number of PhD students in Nutritional Sciences has remained small, since the commitment of time and energy required to supervise a large number of research students currently exceeds the resources of the School's faculty.

Recent discussions about a solution to this problem have centered on hiring teachers in the adjunct teaching track ("maslul nilveh"), with the goal of raising the level of commitment and motivation of the teaching staff.

The internship required and administered by the Ministry of Health for the licensing of dieticians, while not under the authority of the School of Nutrition, in some ways poses a problem for the study program: currently, students who have completed their studies and choose to do an internship may have to wait for up to two years for placement. If the study program were to be altered to include the internship period as part of the university curriculum, this would enable the school to work in cooperation with one or two large

medical centers and with health care organizations in order to find an appropriate solution to the excessive waiting period. An arrangement of this sort would involve changing the BSc to a 4-year academic program, which would require approval by both the Council of Higher Education and the Hebrew University.

3.3. Teaching and Learning Outcomes

3.3.1. What steps are taken in order to evaluate teaching and improving teaching? How are the results of these activities used, specifically, the negative findings about staff members' teaching? Does the unit act in order to locate and encourage excellent teachers? Does the unit or the institution offer the teaching staff regular and systematic activity, including courses/in-service training/instruction and guidance programs in order to improve the quality of teaching? Do new staff members receive special support?

Teaching is evaluated through student surveys, the results of which are presented to both the Head of the School of Nutrition and to the teachers themselves, together with the results of the debriefing session between the students and the head of the school described in Section 3.2.3. If there are negative findings regarding external lecturers, these lecturers are replaced. Faculty members with problematic teaching reviews, as well as others who wish to improve their teaching skills, are provided with a course through the Office of the Dean. Outstanding teachers receive a letter of commendation from the Dean, and are eligible for the Rector's Prize for Excellence in Teaching.

The University organizes teaching workshops for new instructors, before they begin to teach. If subsequent teaching outcomes are positive, no ongoing supervision is imposed on the instructor beyond the feedback obtained from students through teaching surveys and meetings with the Head of the School.

3.3.2. Please provide in the format of Table 3 (page 18) as an appendix to the report, the rankings of the courses as found in the results of the teaching surveys given by the program in the last 5 years (those of faculty members and those of adjuncts). Please divide the information by obligatory courses, elective courses, seminars, and labs/workshops. If the program is using other methods of evaluation, please specify them.

Table 3 is included in the Appendices.

3.3.3. Describe the use of information technology in teaching and learning: methods, scope, types of course etc.

The primary application of information technology in the study program is in the course website and class lectures. Course websites are primarily used for the distribution of syllabi, providing the names of lecturers, and for communicating with students. Other uses are class exercises and discussion groups, showing movies, sharing students' notes, posting literature sources and links to other sites. Additional technologies include the use of slides and PowerPoint presentations during lectures, and the use of HighLearn software to interact directly with students. In addition, the school has acquired the rights

to use the Tzameret software from the Ministry of Health, with access in the computer labs. This is the most up-to-date computerized program available in Hebrew and validated by the Ministry of Health for carrying out nutritional calculations.

The University website shows programs of study and course schedules. Registration for courses and submission of student evaluations for theoretical courses are both computerized. A computerized personal information system enables students to receive information on course roster, grades, and tuition balance, to register for courses and exams, and to participate in surveys conducted by the university. The current mode for communicating with students is via the course website, students' electronic mail accounts, and text messages that are sent to cell phones. Students have access to libraries throughout the university both on campus and via their home computers using a personal code (for course website format See <http://sites.huji.ac.il/htph/shnaton/>)

3.3.4. Learning outcomes

3.3.4.1. What are the program's intended Learning Outcomes (LO)? How were they set?

The BSc program in Nutritional Sciences has two central intended learning outcomes:

1. The program aims to provide students with research qualifications and knowledge of nutritional research. Achievement of this goal is based on the basic, in-depth study of natural sciences by means of coursework in the fields of chemistry, physics, mathematics, plant and animal physiology, cell biology, endocrinology, and other areas. Emphasis is placed on material closely related to nutritional research, such as metabolism, human nutrition, vitamins and minerals, human anatomy and physiology, and pathology.

The desired outcome is that students be qualified to continue their education to an MSc or PhD in research laboratories, on a level with graduates of any other study program in basic biology. This requires that they have experience with laboratory technique, the ability to access the scientific literature, competence in scientific writing, and skills for presentation of research programs and results.

2. The study program is also designed to provide the students with knowledge of, and practical qualifications for, the practice of nutritional therapy. This goal is reached through the many practical and professional courses in nutritional treatment that are included in the program, including courses in the following areas:

- Nutrition for healthy populations, covering such topics as nutrition in the healthy life cycle, food science and preparation, nutrition and sports, and community nutrition;
- Clinical nutrition, which focuses on the pathological aspects of the profession including dietetics, obesity, eating disorders and enteral and parenteral nutrition; and
- Therapeutic skills, presented in courses on psychology and interview techniques;

Ultimately, our goal is to prepare students for the practical internship which is a Ministry of Health requirement for licensing of registered nutritionists. The six-month internship, which is under the authority of the Ministry, is conducted in hospitals throughout the country and is followed by a licensing examination.

These prospective learning outcomes have been formulated through a very dynamic process led by the head of the School in cooperation with the curriculum committee, including 4 researchers from within the school. In periodic meetings, the committee initiates changes in the program in order to adapt to developments in the field of human nutrition, which have occurred with increasing rapidity in recent years. In order to keep pace with the practical state of the profession, these discussions sometimes include graduates of the school who hold leading positions in the Israeli healthcare system. Many of these professionals also serve as external instructors in the School of Nutritional Sciences.

3.3.4.2. Describe the methods applied to measure Learning Outcomes according to the following:

3.3.4.2.1. Examinations

a. Describe the method of examinations and their character, the relative weight of each type of examination in the final grade (written/oral/open/multiple-choice etc.).

In most courses, the final grade is based on a number of exercises assigned during the course of the semester, and a written final examination. Because of the large size of many classes, most written exams are in a multiple choice format. The final exam usually represents at least 50-60% of the course grade.

b. Who constructs the examinations and how is the validity of the examinations assessed?

Written exams are prepared by the course instructors. Since most examinations are now graded by optical scanning, the validity of each question can be evaluated according to the distribution of answers; most questions that do not display a normal distribution are omitted, and the grades are factored accordingly. This method is used to calculate the overall distribution of grades as well, in order to detect unusual results that warrant investigation.

Students are entitled to view their examinations after grades are published, and they may submit an appeal for reevaluation of the exam results. These requests are directed to the instructor, and may be based upon claims of miscalculation of the grade, ambiguous wording of particular questions, or unfairness. The appeal is submitted in writing, and the instructor is required to respond in writing whether or not the appeal is granted.

3.3.4.2.2. Written assignments (projects, thesis, dissertations)

- a. **Describe the types of written assignments and other projects required in the program, their contents and scope (seminar papers, degree papers, thesis, training period, practical training etc).**

B.Sc. - Written assignment for undergraduate students in the program include elective seminar papers (3 credits) and research projects (8 credits):

Seminar papers: 3rd-year students, or second-year students in their second semester, having a minimum grade average of 75 may elect to prepare a seminar paper during their final year in the program. The student chooses a topic in consultation with a faculty supervisor, and is required to prepare a 30-40 page paper based on a reference list of at least 50-60 sources. The supervisor is involved and available for guidance at all stages of the work, and determines if the topic is covered sufficiently. When completed, the paper is submitted to 2-3 reviewers, who determine a grade and may also comment on the paper. The student is sometimes requested to present a seminar lecture before the faculty and students of the school.

Research projects: An independent research project is a study option available for 3rd-year students with a minimum grade average of 80. The student is supervised by a faculty member, in whose laboratory the research is conducted. Initially, the student writes a research proposal which is submitted to the academics committee after approval by the direct supervisor and the head of the school. If the proposal is accepted, the practical research is begun; it generally takes one year to complete. At the close of the project, a written thesis including background, results, and a discussion is submitted to 2-3 reviewers, who may be from the ranks of the Hebrew University or from other institutions. The final grade is jointly determined by the faculty supervisors and the reviewers.

M.Sc. – Undergraduates completing their degree with a minimum final grade average of 80 are eligible to continue to the M.Sc. thesis program. A thesis advisor, who provides a research topic, is selected. By the end of the student's second semester in the program, a research proposal must be submitted, as a condition to continuing in the program. The proposal is evaluated by members of the teaching committee of the School of Nutritional Science, including at least four faculty members. Each committee member receives a copy of the proposal for evaluation, and the proposal is discussed, approved or rejected by the committee in a subsequent meeting. If the research is found to have scientific merit and is deemed feasible as a two-year project and is relevant to the research infrastructure of the school, the committee grants approval and the student may begin to work. If not, the student may be asked to revise the proposal, and the process repeats itself. Upon completion of the research, an oral defense is conducted. The final M.Sc. grade consists of 40% thesis, 40% course grades, and 20% oral defense of the thesis.

Ph.D. – A minimum grade of 85 is required for entrance into the Ph.D. Program. A thesis advisor is chosen by the student, and the research itself must be initiated within one year of entering the program. At the end of the second year, preliminary results are submitted to student’s doctoral committee, along with a detailed working program for the next two years. After the committee reviews the material, the student gives a presentation, and the committee submits a written summary report which includes comments, suggestions for improvement, and assessment of the probability that the research can be completed within 2 more years. The scientific merit of the project is also evaluated.

At the end of four years, the Ph.D. student presents a lecture to students and faculty of the institute, with the doctoral committee in attendance. The committee members either authorize the student to begin writing the final thesis, or require that more experimental work be performed.

Doctoral candidates who have had a minimum of two papers accepted for publication in peer-reviewed journals are permitted to include the submitted papers as chapters in the body of their thesis. If they do not have the required number of publications, all results must be summarized and submitted in thesis form.

PhD theses are evaluated by external reviewers selected by the Division for Research Students in Jerusalem.

3.4. Students

3.4.1. Please provide in the form of a table the number of students enrolled in the program (on all levels) over the past 5 years.

Table 3.4.1. Enrolment in all degree programs of the Hebrew University School of Nutritional Sciences, 2006-2011.

Academic year	BSc	MSc (thesis)	MSc (non-thesis)	PhD
2006-7	227	53	12	8
2007-8	222	52	7	10
2008-9	252	52	3	9
2009-10	271	56	2	6
2010-11	297	43	5	9

3.4.2. What are the entry requirements/criteria for the program and the actual admission data (first degree and advanced degrees, including the "on probation" status.

The admission requirements for undergraduate students are determined by the University; the School is not involved in the process of registration and admission. All

candidates above a certain weighted score (determined on an annual basis by the University) are considered eligible by the University and are accepted to the program.

Admissions requirements for undergraduate students:

- Entitlement to the Israeli Matriculation Certificate (“Bagrut” Certificate)
- A sufficient score on the Israeli Psychometric Test.
- Knowledge of the English language at a level meeting the University’s minimum requirements.
- Knowledge of the Hebrew language – students who did not attend a Hebrew-language high school must pass the University’s Hebrew language proficiency examination.

These requirements, which apply to all undergraduate candidates in all academic disciplines, were adopted by the University in order to locate and accept into its ranks those candidates with the best prospects of successfully completing their studies.

Admissions requirements for graduate students:

- Applicants to the MSc program are required to have a minimum average grade of 80 from their BSc degree, and must find a faculty supervisor for their research.
- A minimum MSc grade of 85 is required for acceptance into the PhD program. PhD candidates must also be interviewed and approved by an applications committee.

Please submit data concerning the number of applicants, admitted students, and enrolled students in the program in the last five years (divided by degree) as follows:

- The number of candidates that applied to the program, the number of admitted students, the number of students that began their studies, and the number of students that completed their studies, including those admitted "on probation".**

Table 3.4.2.A. The number of candidates applying, admitted, and enrolled in the BSc and MSc programs of the HUJI School of Nutritional Sciences, 2006-2011.

Degree	Status	Academic year				
		2006-7	2007-8	2008-9	2009-10	2010-11
BSc	Applicants	526	578	470	478	412
	Admitted*	155	156	144	182	178
	Enrolled	74	74	88	95	96
	Completed	70	66	69	72	NA

Degree	Status	Academic year				
		2006-7	2007-8	2008-9	2009-10	2010-11
MSc	Applicants	48	38	30	40	26
	Admitted*	20	15	11	21	13
	Enrolled	18	13	8	20	11
	Completed	11	17	11	18	NA

*Including those applicants whose admission to the School of Nutritional Sciences was cancelled upon their acceptance to another study program

b. What are the de facto admission criteria for the program? If there is a discrepancy between the admission criteria and the de facto admission data please specify.

The admissions data for 2006-2011 are shown in the following table. There is no discrepancy between admission criteria and the de facto admission data.

Table 3.4.2.B. Average admissions data for BSc applicants admitted to, and enrolled in, the HUJI School of Nutritional Sciences, 2006-2011.

Group	Requirement	Statistic	Academic Year				
			2006-7	2007-8	2008-9	2009-10	2010-11
Admitted	Matriculation Grade	Avg.	10.64	10.69	10.86	10.86	10.80
		S.D.	0.55	9.32	0.38	0.48	0.44
		Number	146	148	139	166	172
	Psychometric Score (200-800)	Avg.	659.3	667.4	662.2	674.6	661.3
		S.D.	40.9	41.9	41.1	44.0	35.8
		Number	151	149	144	180	175
Enrolled	Matriculation Grade	Avg.	10.48	10.53	10.78	10.77	10.71
		S.D.	0.55	0.48	0.39	0.48	0.47
		Number	68	71	88	86	95
	Psychometric Score (200-800)	Avg.	660.8	666.5	659.5	671.7	662.0
		S.D.	38.4	41.0	40.5	41.1	35.6
		Number	73	73	91	94	96

Notes: The psychometric examination is scored on a scale of 200 - 800, with a mean of 560 and a standard deviation of 90. The maximum Matriculation grade can be greater than 10 because students can receive bonus points if they are enrolled in advanced classes. Applicants

who hold previous academic degrees are not required to submit psychometric exam scores. Some overseas students have no matriculation grades, and their admittance was based on psychometric test scores or the equivalent (e.g., the SAT for students from the United States).

3.4.3. Describe the selection and admission process, the criteria of advancement from year to year and for completion of the studies, including the requirements for being entitled to receive an academic degree. Is there a policy of affirmative action and standards for the admittance of candidates with special needs? In case such policy and standards have been established, please describe them. How are the admission criteria decided upon, and to what extent are the criteria and procedures for admission related to the aims of the program?

Candidates for undergraduate degree programs are evaluated on the basis of an equally weighted average of their matriculation scores and psychometric examination results. Precedence is given to applicants with the highest average, until all available places are filled. On the university level, there is no specific minimum grade requirement for either the matriculation grade or psychometric examination, but individual study programs may have minimum requirements. While the School of Nutritional Sciences has no official minimum requirements for acceptance into the BSc program, the program is in great demand, and the actual scores of its students are thus very high (see Table 3.4.2.B.).

Applicants with previous academic studies can be evaluated based on their academic achievements, rather than their matriculation grades. If the candidate has a number of previous academic credentials, a weighted grade taking all of them into account will be used for this purpose. This applies to applicants who have completed the academic preparatory programs of the Hebrew University or Tel Aviv University, or who have previously studied in other degree programs.

Foreign students are required to present a secondary school diploma equivalent to the Israeli matriculation certificate, a document certifying academic studies in their country of origin, or a certificate from a pre-academic program for new immigrants. The final grade of the HUJI pre-academic program is weighted with the psychometric exam score in the admissions process, in place of secondary school grades.

Candidates for the MSc program in the School of Nutritional Sciences are required to hold an undergraduate degree from an accredited academic institution, with a final grade average of 80 for the non-thesis program, and 85 for the research track in Nutritional Sciences. In order to be accepted into the PhD program, candidates are required to have a final grade average of at least 85 in both MSc courses and their MSc thesis.

Applicants may list up to four study programs in which they have an interest, in order of preference. If the applicant is accepted to the first-choice program, additional

programs are not addressed. If he or she is not accepted to the priority program, the next choice is explored, and so on. If the student is accepted to a program other than their first choice, and is later admitted to the priority program, the original non-priority admission is cancelled.

Applicants whose qualifications do not meet the standard university admissions requirements, but who possess other relevant qualifications, may submit a request to the Appeals Committee for reconsideration of their application.

A university-wide affirmative action program has been in place in HUJI since the 2001-2 academic year. A pre-determined number of applicants for a given study program whose qualifications are somewhat below the usual admissions standards, but who are judged eligible for preferential treatment according to the criteria promoted by the Association for Educational Advancement, an NGO dedicated to fostering equality among all sectors of Israeli society, may be accepted to the program.

Applicants with special needs (learning disabilities, or visual or hearing impairment) are entitled to take the psychometric examination under conditions suited to their needs. If their qualifications do not meet the regular university requirements, the application is evaluated by the Appeals Committee of the Student Authority.

BSc applicants with outstanding qualifications who are accepted to, and enroll in, the study program are eligible for a merit-based scholarship granted by the Faculty. The process of designating outstanding students is initiated when acceptance letters are sent to applicants. The scholarship covers between 50 – 100% of the student's annual tuition costs. Only full-time students are eligible for this scholarship.

3.4.4. What are the de facto criteria for advancing to the next year in the program as well as the criteria for completion of the degree, including the graduation requirements.

Advancement from the first to second year of the program is contingent upon a final grade of at least 70 in Biochemistry (71280). This is to ensure that the student has sufficient background for successful participation in the core course in Human Nutrition (65214), in which a minimum grade of 70 is also required for advancement to the subsequent stage of the program. This level of success in these two courses is intended, in turn, to prepare students for the two central professional courses in the BSc program, Dietetics I and II (65320, 65322). A minimum final grade of 70 in both Dietetics courses is a requirement for internship placement. The Biochemistry and Human Nutrition courses also serve as prerequisites for many other courses in the School.

Graduation requirements are uniform for all study programs in the Faculty, and can be summarized as follows:

- Completion of all course requirements for a given study program, regarding both the scope of coursework and minimum grades;
- A minimum passing grade, as defined by the Faculty, in all courses included in the student's final grade average;
- A minimum cumulative average for all courses, as defined by the Faculty, but not less than 65.

In general, the minimum passing grade for courses in the Faculty of Agriculture, Food and Environment is 55 for BSc students, and 60 for MSc students.

3.4.5. What is the yearly drop-out rate of students from the program over the last five years, and what are the reasons for their leaving (academic/ - financial/other)? Is there satisfaction with the drop-out rate? If not, what steps does the unit take in order to prevent, reduce or increase drop-out?

The exact dropout rate is difficult to calculate because some students take a break for one year and then return to school, and others transfer to different departments within the university. There are however, those who abandon their studies altogether; we estimate their numbers at around 10%. Most students who do drop out do so by the end of the first year, generally because they find the program too demanding. The University and the School try to prevent this by offering several repeat examination dates, and tutoring services as described in section 3.4.7.1.

3.4.6. To what extent are the program's students involved in research projects of the staff members? Specify in which projects, the number of students involved and the scope of their involvement. Is there a procedure for encouraging students to carry out independent research of their own?

Undergraduates may be involved in staff research projects in one of three ways, either by electing to prepare a senior research project or seminar project in the last year of their studies, or through participation in the Amirim Program for outstanding students (see below). In each of these frameworks, students are closely involved in ongoing research conducted in the School's laboratories. Each student is assigned their own area of study from within the large range of projects of the academic staff and the study is conducted independently by the student, with supervision from the faculty advisor and one of the advisor's research students.

During the current academic year (2010-2011), 2 students from the Faculty of Agriculture, Food and Environment participated in the Amirim Program; both were from the School of Nutritional Sciences. Among the School's undergraduates, 7 students completed a senior research project, and 6 presented a seminar project.

The Amirim Program Outstanding undergraduate students may enroll in the Amirim Program from the third semester of their studies. Requirements for the program are as follows:

- Students completing at least 45 credit hours during the first year of their studies with a minimum grade average of 94 are eligible for participation.
- Students accepted to Amirim may remain in the program on the condition that they maintain a minimum grade average of 90.
- The Amirim research project (course number 65011) constitutes 25% of participating students' required BSc credit hours.
- The results of Amirim research projects are submitted in the form of a written thesis, a poster, and a lecture, which constitute 60%, 20% and 20% of the final grade, respectively.
- Research conducted in the framework of the Amirim program may serve as the foundation for the student's MSc or PhD research at the Faculty.

The process of enrolment in the Amirim Program is administrated within the Rehovot campus by a program coordinator from among the academic staff of the Faculty. Amirim students are eligible for a tuition grant of a maximum sum equivalent to the Dean's scholarship (see Section 3.4.9.) for the second and third years of their studies.

The Research Project Undergraduate students who maintain a minimum grade average of 81 during the first 4 semesters of the study program may elect to conduct a small independent research project during the third year of the program. Interested students are required to choose a supervisor from among the academic staff of the School, and to formulate a 2-3 page research proposal, which is submitted to the Office of Instruction for approval. Upon authorization of the proposal, the research project is included in the student's individual study program as course number 71260, for an equivalent of 8 credit hours.

Results of the research project are submitted during the last semester of the program, in the form of a scientific paper. The results cannot be used by the student as the basis of future MSc or PhD research. The final grade of the project is determined as follows: supervisor's evaluation, 50%; evaluation by the head of the Department, and by an additional referee appointed by the head, 50%.

The Seminar Project This program is open to students who maintain a minimum grade average of 75 during the first 4 semesters of the study program, who are interested in conducting a critical analysis of a chosen topic based on a literature review and consultation with professionals.

After choosing a supervisor and a topic for the seminar project, and following approval by the head of the Department, the project is included in the student's program of studies as course number 71259, for an equivalent of 3 credit hours. The final grade is determined by the supervisor, and is authorized by the department head.

Some of the seminar projects conducted during recent years were done within the framework of the Perach Tutoring Project as a community outreach program on the topic of childhood obesity (see section 3.2.1.). Results were presented at a day-long symposium attended by the head of the School, faculty supervisors, and professional dietitians.

3.4.7. Counselling systems

3.4.7.1. Describe the system of academic counseling for students before and during the period of study (including reference to the structuring and approval of the study curriculum). Do students with special needs receive special support? If so, please specify.

The head of the School acts as an academic advisor with an open-door policy for students enrolled in the study program. Specifically, the head advises on elective courses according to the interests of the individual student, and if there is a need to spread the program over more than 3 years, counseling is provided as to the best order of courses. Many of our students enroll in the nutritional sciences program after previously studying at other universities or earning degrees in other fields. The head is responsible for constructing an appropriate course program for these students, in light of their background.

Academic support is provided for all students, including those with special needs: in most large courses, the lectures are videotaped and available for viewing in the Audio-Visual Center, and any student may make an audio recording of lectures upon receiving permission from the lecturer. In addition, virtually all lectures are accompanied by a slide show, which is posted by the instructor on the course website with easy access for all students. The Student Union organizes small study groups for some required courses, and also maintains a collection of examinations from previous academic years for most courses. Instructors may also post sample exams on course websites. On an individual level, all instructors and teaching assistants hold office hours during which students may approach them for assistance with course material.

Students with documented special needs receive considerable support in writing exams. This support can include additional time for examinations, oral examinations in place of written tests, examination forms in large print, and other individual assistance, as needed.

3.4.7.2. Are counseling and assistance provided to students with regard to possible directions for their future professional careers? If so, describe these procedures. Are there work placement services for the graduates? If so, please describe this activity.

The career opportunities presented by the study of nutritional sciences are very clearly defined, and thus no formal employment counseling is provided by the School. At the

University level, a number of career days and employment fairs are held on the different campuses during each academic year. Career counseling is also provided by the Office of the Dean of Students <http://studean.huji.ac.il/?cmd=ease.213>

3.4.8. What are the mechanisms that deal with student complaints?

The Hebrew University has a variety of mechanisms for dealing with student complaints of an academic, administrative, and/or personal nature. Problems with a specific course, including grade appeals, are first addressed by the course instructor. At the department level, the departmental or interdepartmental curriculum committee receives and discusses students' complaints and problems. The Student Union is involved in handling Faculty-level academic problems involving undergraduate students, while graduate students may turn to the Director of Graduate Studies to air complaints.

Academic problems of a personal nature are reported to the Assistant Dean for Instruction, through the Office of Instruction.

The Dean of Students, who serves as the university ombudsman for handling student complaints, has a representative on the Rehovot campus before whom personal and academic complaints can be aired. The process of resolving complaints involves an interview with the student submitting the complaint, and with the staff members and/or students at whom the complaint is directed. The Dean's decision is sent in writing to all parties involved.

Complaints of sexual harassment are dealt with by a designated staff member in the office of the Dean of Students. University policy in this area has been clearly outlined and brought to the attention of students and staff by widely circulated policy statements and periodic workshops for university personnel.

Within the School of Nutrition, the semi-annual debriefing which is held at the end of each semester provides all students with an opportunity to air complaints and discuss problems directly with the head of the School and the administrative secretary. Issues that arise in this forum are dealt with immediately by the school administration, with all relevant parties involved in addressing problems and finding solutions.

3.4.9. What financial assistance is provided to students with financial problems and to outstanding students? What other types of financial support is available to students?

1. Merit-based scholarships. The Hebrew University and the Faculty of Agriculture, Food and Environment seek to encourage outstanding students whose academic accomplishments qualify them for a place on the Rector's or Dean's List of Excellence.

The Dean's award for BSc students is a 50% tuition grant awarded to students chosen from the Dean's list. The Dean's award for MSc students, also awarded to a certain number of students chosen from the list, includes a monthly living stipend for one year, and a 100% tuition grant. The number of students receiving these grants is dependent upon the University's available resources in any given year.

The most outstanding students on the Dean's List are chosen for inclusion on the Rector's List of Excellence. The Rector's grant for BSc students is a 100% tuition grant with an additional monetary award. MSc students included in the Rector's list receive a monetary award in addition to the Dean's award.

The above scholarships are awarded to students who have completed one year of their studies, based upon their academic achievements. First-year undergraduates are eligible for a merit scholarship during on the basis of their application qualifications. Outstanding students participating in the Amirim Program (see Section 3.4.6.) who have submitted their research proposal are eligible for a scholarship equivalent to the Dean's award for undergraduates.

2. Aid based on financial need: Scholarships and low-interest loans for students with financial difficulties are available through the Financial Aid Office. Aid is granted according to the student's financial situation and academic achievements. The Hebrew University Student Union also provides access to many sources of financial assistance for students who require aid.

Information on all of the above can be found on the university's website, including deadlines for the submission of applications. The information is also prominently published on bulletin boards.

3.4.10. Does the institution and/or the parent unit maintain contact with their alumni, employers, and with employment market. Please specify the measure of integration of alumni into the labor market (especially relevant when the study program a "professional" one): where have they found employment, what positions do they hold, how much time has elapsed between graduation and employment, and how many students continue their studies to advanced degrees or other areas (specify area of study and degree level). Relevant surveys on this matter would be most appreciated.

In the past, the School has not maintained official contact with alumni, but because of the nature of the employment market in the field of nutrition, and the fact that until recently, HUJI offered the only study program for nutritional sciences in the country, informal contact with a great number of our graduates has been ongoing over the years. During the current academic year, a decision was made by the head of the school to initiate a survey of alumni, through the newsletter of ATID, in order to learn

about their current state of employment and to promote networking. The survey is in its early stages.

3.4.11. In summary, what are the strengths and weakness of the issues specified above?

Strengths: The School of Nutritional Sciences draws its students from among the most highly qualified applicants to the Hebrew University. The high academic level of our student body contributes to the overall level of studies at the Faculty of Agriculture, Food and Environment, and the Faculty, in turn, encourages excellence through scholarships, incentives, and special programs for outstanding students. In spite of the intense demands of the study program in nutritional sciences, many of our students complete their degrees with honors and take an active part in research through research projects, seminar projects, and the Amirim Program.

Weaknesses: The School has not yet succeeded in maintaining continuous contact with alumni, but steps have been taken to correct this situation. In addition, the issue of internal awards and incentives for academic excellence, at the level of the School itself, needs to be addressed.

Since Nutritional Science is not only an academic field, but a vocation as well, many of our students are eager to begin their careers upon completion of their studies, rather than continuing their education to higher degrees. This is one of the reasons that the number of research students in the School has remained small, relative to the number of undergraduates in the program.

While covering a very wide range of topics, the research opportunities that the School has to offer are limited in approach to cellular and molecular nutrition. We lack a research base in the areas of epidemiology, clinical nutrition, sports nutrition, and the psychology of nutritional behavior, all of which are of interest to many of our students. Strengthening these fields of research would help us to increase participation in our graduate level programs.

3.5. Human Resources

3.5.1. Teaching Staff

3.5.1.1. Describe the profile of the program's teaching staff in the format of the tables 2A through 2D.

Table 3.5.5.1.A. (2A): Senior Academic Staff Employed

Name of Staff Member	Employment Status	Part of Full Time Position in the Program (1)		Area of Specialization	Courses taught by the staff member (2)			Additional Tasks in Institution	No. Of Students Receiving Guidance	
		Weekly Hours	Per Cent		Name of Course	Weekly Hours	Total Weekly Hours for Staff member		2 nd Degree	3 rd Degree
Prof. Betty Schwartz	Associate Professor	--	100	Nutrition and intestinal health/cancer	1. Human Physiology	4	6-8	Outgoing Head, School of Nutritional Sciences; Academic advisor, international study program; Member of curriculum committee	4	4
					2. Human Nutrition Lab	3				
					3. Human Anatomy and Physiology Lab	3				
Prof. Ram Reifen	Associate Professor	--	100	Pediatric nutrition, GI health	Disease: Pathology and clinical manifestations I	3	6-8	--	1	3
					2. Pediatric Nutrition	2				
Prof. Oren Froy	Associate Professor	--	100	Biological clocks, obesity	1. Human Nutrition	7	6-8	Head of biochemistry and food science study program; Head of curriculum committee	3	2
					2. Biochemistry	7				
					3. Neurobiology of Feeding	2				

Name of Staff Member	Employment Status	Part of Full Time Position in the Program (1)		Area of Specialization	Courses taught by the staff member (2)			Additional Tasks in Institution	No. Of Students Receiving Guidance	
		Weekly Hours	Per Cent		Name of Course	Weekly Hours	Total Weekly Hours for Staff member		2 nd Degree	3 rd Degree
Dr. Oren Tirosh	Senior Lecturer	--	100	Free radicals, fatty liver	1.Human Nutrition	7	6-8	Incoming Head, School of Nutritional Sciences; member of curriculum committee	3	3
					2.Biochemistry lab	3				
					3. Principles in toxicology and pharmacology	2				
Dr. Aliza Stark	Senior Instructor, teaching track	--	100	Nutritional education	1. Food Preparation	5	16	Advisor and instructor, international study program	6	--
					2.Food Science	2				
					3.Dietetics I	3				
					4.Dietetics II	3				
					5.Seminar in Nutrition	2				
					6. Nutritional Education Programs	3				
					7. The Nutritionist and the Community	2				
					8. Graduate Seminar in Nutrition	2				
Dr. Efrat Monsonego-Ornan	Senior Lecturer	--	100	Bone development and nutrition	1.Human Endocrinology	2	6-8	Member of curriculum committee	3	4
					2.Dietetics I	3				
					3. Dietetics I Exercise	3				
					4. Dietetics II	3				
					5. Dietetics II Exercise	3				
Dr. Aron Troen	Senior Lecturer	--	100	Alzheimer's and nutrition	(New faculty member)		--	--		

(1): All members of the academic staff hold full-time positions in the School of Nutritional Sciences. None hold additional positions outside the institute; thus, the columns relevant to additional employment have been deleted.

(2) Only those courses taught during the 2010-11 academic year are listed.

Table 3.5.5.1.B. (2C): Adjunct Teaching Staff - Senior

Name of Teacher			Employment Status	Yearly Teaching Units	Area of Specialization	Courses taught by the teacher	Additional Tasks in Institution
First	Family	Academic degree					
Eyal	Kliper	PhD	Dept. of Animal Science.	2	Physiology in animal systems	65210 Human histology and	Teaching assistant
Yael	Yosef - Pozansky	PhD	Achva College	3	Statistics	71013 Fundamental statistics	---
Mordecai	Cohen	PhD	Shomron R&D	3	Statistics	71013 Fundamental statistics	---
V.	Ostapenko	PhD	Bar Ilan University	3	Mathematics	71054 Calculus I	---
Oren	Scheinberg	PhD	Instruction in academic institutions	7	Biochemistry	71080 Biochemistry	Instructor, pre-academic preparatory
Yuval	Cheled	PhD	Sheba Medical Center,	7	Sports physiology, Stress	65214 Human nutrition	--
Anna	Aronis	PhD	Private practice; Leumi Healthcare Fund	11	Vitamins and dietary supplements	65214 Human nutrition 65122 The physiological and clinical	Supervision of research students, HUJI
Sari	Aloni	PhD	Wolfson Hospital	2	Psychology	65311, 65312 Developmental Psychology I,II	Supervision of research students; Volunteer
Bat sheva	Katz-Porat	MD	Israel Ministry of Health	3	Internal medicine	65307 Disease: Pathology and clinical	Supervision of research students
Oded	Eisenberg	MD	Kaplan Hospital	3	Cardiac care	65307 Disease: Pathology and clinical	Supervision of research students
Tali	Sinai	PhD	ATID (chairperson); Private practice	12	Pediatric nutrition	65322 & 65322 Dietetics I, II 65321 & 65323 Exercise in Dietetics	Supervision of research students
Sigal	Aroch	PhD	Public Healthcare Fund	3	Clinical dietetics	65322 Dietetics II	--
Ilana	Feldblum	PhD	Ben Gurion University	3	Nutritional epidemiology	65313 Introduction to epidemiology	--
Felicia	Stern	PhD	Public Health Foundation	2	Clinical dietetics	65617 Nutritional and health survey	--
Mor	Yisraeli	PhD	Maccabi Health Fund	3	Eating disorders	65646 Approaches in the treatment of	--
Amit	Kravitz	PhD	HUJI	2		71251 Introduction to the history and philosophy of science	--
Yehoshua	Haba	PhD	Private Consultant	2	Food Science	71445 Introduction to food science:	---
Amnon	Tzirlin	PhD	Israel Ministry of Health	2	Food industry legislation	71472 Food legislation and	---

Name of Teacher			Employment Status	Yearly Teaching Units	Area of Specialization	Courses taught by the teacher	Additional Tasks in Institution
First	Family	Academic degree					
Liora	Gvion-Rosberg	PhD	Tel Aviv-Yaffo College	2	Social Sciences, Government	65302 Eating habits: the socio-cultural context	---
Lev	Mikolitzky	PhD		2	Consumerism	71726 Consumer	--
Noam	Meiri		HUJI Faculty of Medicine	2	Neurobiology	71830 Introduction to Neurobiology	Academic staff
Moria	Golan	Prof.	Tel Hai College	2	Eating disorders	71172 The foundation of eating disorders	--
Naama	Constantini	MD/PhD	HUJI	4	Sports medicine	71943 Exercise biology and physiology	Center for Alternative Medicine
Gal	Dubnov-Raz	MD	Beilinson Hospital	4	Pediatrics and sports medicine	71943 Exercise biology and	--
Avner	Shahar	MD	Clalit Healthcare Fund	3	Geriatrics	73542 Geriatric nutrition	--
Danit	Shahar	PhD	Ben Gurion University	3	Geriatric nutrition, nutritional	73542 Geriatric nutrition	--
Ilana	Dariel	PhD	Private practice	2	Clinical dietetics	Food Allergies	--
Sarit	Ofer	PhD	Kaplan Medical Center	2	Cytology	Diagnostic Cytology	--

Table 3.5.1.1.C (2D): Adjunct Teaching Staff - Junior

Name of Teacher			Employment Status	Yearly Teaching Units	Area of Specialization	Courses taught by the teacher	Additional Tasks in Institution
First	Family	Academic degree					
Galit Galit	Alderoti	MSc	Ministry of Health	3	Clinical dietetics	65101 Introduction to the profession of the	--
Amira	Berger	MSc	Private practice	5	Psychology	65217 Introduction to Psychology	--
Yosefa	Kachal	MSc	IMH	2	Geriatric nutrition	65617 Nutritional and health survey	--
Niva	Basudo-Manor	MSc	IMH	2	Public health	65618 Public health	--

3.5.1.2: How are the staff members divided into areas of specialty in the discipline and to what extent does the faculty profile allow flexibility within the study program.

Each member of the academic staff has an area of expertise in research, as described below; all of the research areas are related to human nutrition.

Prof. Betty Schwartz specializes in research on the relationship between nutrition and cancer, and on the link between nutrition and intestinal health. **Prof. Oren Froy** conducts research on the biological clock and its influence on hunger and satiation. **Prof. Ram Reifen's** research program concentrates on the area of pediatric nutrition. **Dr. Oren Tirosh** investigates the role of fatty liver and oxygen radicals in nutrition, and **Dr. Efrat Monsonogo-Ornan** researches the area of bone health. **Dr. Aron Troen** is a specialist in the area of nutrition and the brain, and the role of nutrition in Alzheimer disease. **Dr. Aliza Stark** conducts studies on nutritional education.

The wide range of research specializations among our academic staff allows for a great deal of flexibility within the study program, both in course content and in mutual interactions among instructors.

3.5.1.3: What specializations and skills (including experience and training) are required of the staff members teaching in the study program, including those who teach practical courses/practical training.

Instructors of basic science courses are required to hold a Ph.D. degree. Applied courses may be taught by dieticians with a Ph.D., or, in exceptional cases, an M.Sc. degree, whose background includes clinical, field and teaching experience. This group includes certified nutritionists who hold positions in hospitals, in the Ministry of Health, or in community-based agencies. In addition, courses related to pathology and human nutrition may be taught by medical doctors.

3.5.1.4: What steps are taken to ensure that staff members are updated, academically and professionally, with regard to the program?

The School of Nutritional Sciences actively encourages continued professional development of faculty members and teaching staff, through attendance at international and local conferences and scientific meetings, and participation in seminars and workshops. These activities are supported by a designated fund allotted to each instructor. The school has instituted a regular Sunday morning seminar at which current research in fields related to food science and nutrition is presented. Staff members are also expected to maintain their own ongoing research program, to seek funding and collaborate with colleagues in Israel and abroad. Promotion and tenure are related in part to successful individual investment in this area.

3.5.1.5. What are the rules, criteria and procedures for appointing the head of the study program and the staff, including tenure and promotion, the standard duration of service at each position, renewal of appointment in elected positions and dismissals? What steps are taken to ensure that the faculty are informed of these policies and procedures? Are you satisfied with these procedures?

The Head of the School of Nutritional Sciences is elected by a forum of all faculty members of the Institute of Biochemistry, Food Science and Nutrition (including adjunct teaching staff). Any tenured or tenure-track faculty member of the School can submit their candidacy for the position, which is held for a maximum of two

consecutive 3-year terms. We feel that this process is fair, and that it has consistently been conducted to our satisfaction.

For details on decisions regarding faculty appointments, see section 3.5.1.9. In decisions regarding promotion of a senior lecturer to associate professor, the Head of the Institute of Biochemistry, Food Science and Nutrition makes a recommendation to the Dean. Promotions to the status of full professor, as well as granting of tenure, are handled by the Dean, who is the leading decision maker in these cases, and by the Rector. Neither the Institute nor the School of Nutritional Sciences is involved at this level

While it is our belief that we could more effectively encourage excellence among the adjunct faculty if we were permitted to grant them promotions, we feel that the process of academic faculty promotion within the school is satisfactory as it stands.

3.5.1.6 What is the definition of the position of the head of the study program? What credentials (experience and education) are required for this position?

The Head of the study program is a member of the full-time faculty, with a minimum status of senior lecturer and credentials in research. The responsibilities of the head fall into two categories:

1. Effective Administration of the academic affairs of the study program. Responsibility for the curriculum committee and the content of the study program lies with the head of the program, including the introduction of changes in existing courses and the addition of new courses. Every new course is proposed to the instruction committee by the head of the School after the faculty has developed a detailed syllabus.

The head acts as a liaison with the adjunct teaching staff, especially in matters of recruitment and scheduling, and is responsible for assigning teachers and teaching assistants to appropriate courses, as well as monitoring the performance of adjunct staff members with regard to course content and quality of teaching. The head of the school ensures that members of the adjunct teaching staff provide detailed course syllabi, designate course reading lists, ensure that recommended reading material is available to students in the library, and submit examination forms to the administrative office on time. The head also monitors the content of examinations to ensure that it corresponds to the syllabus.

In many cases, the head of the School provides both scientific and administrative support to research students. A request is submitted to the Dean for every instructor who is interested in supervising research students, and the head of the School is responsible for following up on the progress of each student.

The head of the School supervises the administrative staff and initiates and conducts departmental meetings.

2. Student affairs. The head of the program holds responsibility for the School's students, from the time of their application until completion of graduate degrees. The head serves as academic advisor to undergraduates, and monitors the progress of research students in conjunction with faculty advisors. The semi-annual debriefing session for students and faculty is conducted by the head of the program, as is implementation of suggestions made during these sessions. The head also mediates between the students and the academic administration and is available to students for consultation regarding problems of an academic nature.

The head of the School holds a meeting with second-year students to explain their option to register for either a seminar project or a research project in the final year of the study program (see Section 3.4.6.), and to discuss participation in the Perach tutoring project (see Section 3.2.1.). An additional meeting is convened by the head of the School with third-year students to discuss MSc programs, review research topics available for thesis work, and explain the policy of granting scholarships and teaching assistant positions.

The head of the School meets with new MSc students to outline their obligations as graduate students, including requirements such as submitting a coursework program and research proposal, and presenting seminars. The head also organizes, and is present at, all oral MSc thesis defenses, contributing to the examination and the final grade.

3.5.1.7. How is full employment defined in the institution for senior and junior staff, and how many hours are they required to teach in each of the study programs?

Full employment for academic staff is defined by the Hebrew University as follows:

- Academic track: 6-8 weekly hours of teaching, in addition to research and administrative activities;
- Teaching track: 16 hours of teaching per week;
- Adjunct teaching track (non-tenured): On an hourly basis.

3.5.1.8. Are staff members obliged to serve as advisors for final projects, theses and dissertations? Are there criteria for assigning advisors to the above-mentioned papers and projects?

Within the framework of the duties of the academic staff, all faculty members are expected to supervise research and seminar projects for BSc students, and to serve as thesis advisors for MSc and PhD students. In addition, all staff members serve as referees for student research theses and participate in research student examinations. Students

generally choose their advisors on the basis of personal interest in the research fields and the specific projects that are available.

3.5.1.9. What is the policy regarding recruiting and absorbing teaching staff (senior as well as junior) and what are the plans for the future recruitment to the study program? How are these plans made and by whom?

Policy for recruitment of new faculty for the School of Nutritional Sciences is determined by the Institute of Biochemistry, Food Science and Nutrition. In seeking new faculty for the School, the Institute has a preference for candidates who are able to meet certain current and projected needs of the study program, including the ability to develop a research program in fields such as nutrigenomics, genetics, nutritional pharmacogenetics, neurobiology, eating behaviors, epidemiology, sports nutrition, and chronic metabolic diseases. Once a primary research field is decided upon, the criteria used to evaluate candidates include 1) their ability to obtain external funding for research, 2) their ability to generate research worthy of publication in the scientific literature, 3) the suitability and motivation of the candidate for teaching subjects which the Institute sees as important for the study program.

3.5.2. Technical and administrative staff

Describe the technical and administrative staff, including the number of staff members and their job descriptions. What kind of support does the technical and administrative staff provide for the academic activity

The Institute of Biochemistry, Food Science and Nutrition employs three part-time secretaries. **Dvora Weisberg** holds a 50% position, serving the Institute as a whole. **Eti Akerman** fills a 50% position in the Department of Biochemistry. **Shoshana Levkovitz** holds a 70% appointment, and serves the School of Nutrition. All three secretaries provide extensive support to students and instructors by taking responsibility for communication with students and staff, serving as information sources, and providing organizational assistance with undergraduate and graduate examinations.

Four technical staff members are employed by the School. They hold part or full-time positions which are funded either by the University or in some part by the Institute, or by research monies. They perform multiple tasks:

- **Dr. Irena Peri** holds a PhD in Biochemistry from the Hebrew University. Her responsibilities are divided equally between instruction and research: in research, she works with Prof. Betty Schwartz and Prof. Sam Saguy. Her teaching responsibilities include lab preparation for courses taught by Dr. Aliza Stark and Dr. Masha Niv, and she is frequently called upon to assist in several courses of the School and the Department of Biochemistry.
- **Nava Chapnik** holds an MSc degree in Biochemistry and a BSc in Nutritional Sciences from the Hebrew University. Half of her 50% position is devoted to the

research program of Prof. Oren Froy, and the other half involves teaching responsibilities: Ms. Chapnick is responsible for maintaining all instruments and equipment in the prep room for the School's teaching laboratory.

- **Svetlana Penn** holds an MSc degree from Kazan University. She is employed in the research laboratories of Prof. Zecharia Madar and Dr. Hagai Abeliovich. She is also responsible for preparing teaching materials for the laboratory courses in Biochemistry and in Proteins and Enzymes.
- **Merav Weinstein** holds an MSc degree in Field Crops from the Hebrew University, and is employed in the laboratories of Dr. Aron Troen (25%), Dr. Ido Braslavsky (25%) and Dr. Itzhak Bilkis (50%). She has been assigned to serve as an instructor for the chemistry laboratory. Her position is non-tenured and is thus funded entirely by the Institute, with no contribution from the University.

3.5.3. In summary, what are the points of strength and weakness of the human resources (teaching staff, technical and administrative staff)?

Strengths: The teaching staff of the School meets very high professional standards. Our instructors, both tenured and adjunct, share a deep commitment to the School and the study program, and they have much to contribute to our students, each according to his or her own area of expertise. Members of the full academic staff bring their own research experience to their teaching, which allows student input and involvement in current issues and directions in the field of nutrition. This mutual exchange forms the academic base for our research program.

The technical staff is highly educated and has extensive experience in operating both teaching and research laboratories. They are extremely dedicated and take an active role in instruction and research.

The administrative staff is very experienced and has evolved along with the school for many years. They provide many important services to students and staff, acting as mediators, organizing examinations, communicating with the adjunct teaching staff, and providing information and support for students. In taking responsibility for these activities, they help to relieve the administrative burden placed on faculty members.

Weaknesses: The small number of faculty positions in the School and the resulting heavy teaching burden placed on each staff member, is a limiting factor with implications for our research and teaching activities. The small number of faculty adversely affects the scope of research projects that can be offered to potential graduate students for their thesis work. This issue is discussed in further detail in Chapter 4.

Similarly, as outlined in Section 3.5.2., the School employs only a small technical staff. All of the technicians fill multiple roles and often divide their time among several

research groups, a situation which leads to difficulties for technicians and researchers alike.

The administrative staff devoted specifically to the School is limited to a 70% position, which is insufficient in light of the large enrolment of the School and the important role that the secretary has taken upon herself in providing support for students and staff.

3.6. Infrastructure

3.6.1.1. What is the physical location of the unit in the institution, in which building is it located, and where does the study program under evaluation operate? Do other study programs share the building?

The School of Nutritional Sciences is located in The Fribourg and Franklin buildings on the campus of the Hebrew University Faculty of Agriculture, Food and the Environment in Rehovot.

The administrative center of the school is located on the ground floor of the Franklin building. The center includes three offices for administrative staff, a small conference room with network access and a desktop computer, and additional space housing general office equipment such as a fax machine and photocopier. The Franklin building, which contains laboratories, offices, and classrooms, is shared with the Institute of Plant Sciences, which uses most of the rooms on the second floor. Two of the second-floor laboratories are used by two faculty members of the School of Nutritional Sciences. The instructional kitchen facility is located on the first floor.

3.6.1.2. How many rooms serve the academic staff (senior, junior and external) and technical staff of the program, and what equipment is available in each room?

The academic and technical staff of the school is served by a total of 20 rooms, including 7 faculty offices and 13 rooms housing research laboratories. All of these rooms are equipped with network and telephone connections, computers, basic office and/or laboratory furnishings, and air conditioning. The nature of the equipment in each laboratory is dictated by research needs. The offices and research laboratories are distributed in a number of buildings, including the ground floor of the Fribourg building, which also houses the Departments of Biochemistry and Food Science.

Instructors employed in the teaching track have offices on the ground floor of the Franklin building, next to the School's administrative center. Emeritus faculty is situated in that same area, as is one office for the use of the adjunct teaching staff.

At this time, the technical staff has desk space within the research laboratories, and there is no space available for new faculty members joining the School. In fact, our newest

junior faculty member, Dr. Aron Troen, has been provided with an office and laboratory in the Kennedy-Leigh building, which is generally reserved for emeritus faculty members from other departments. The recently completed construction of a new facility housing laboratory facilities for instruction may help to alleviate these space limitations. The new facility will be used in the coming academic year (2011-2012), and a renovation is planned for the large space previously allotted to teaching labs on the second floor of the Fribourg building. Conversion of this space to research labs will hopefully relieve some of long-term crowding problems of the School's research facilities.

3.6.2 Classes

3.6.2.1. How many classrooms, seminar rooms, rooms for group activities, and auditoria serve the study program, how many seats do they have, and what is the equipment can in each room /classroom/auditorium (including reference to the possibility of using personal laptop computers on campus).

The School does not have designated classrooms or auditoria, but is rather served by all of the facilities of the campus, as is the case for most of the departments located on the Rehovot campus. The scheduling and allocation of classrooms is coordinated by the Office of Instruction. Since most of the courses of the School have a large enrolment, we make use primarily of the larger auditoria on campus, all of which are equipped with a computer for use by the lecturer. The large halls have sound systems with microphones for lecturers and a video system for projection of lecture material, and all auditoria and classrooms are air-conditioned. A medium-sized classroom located on the ground floor of the library building has an adjacent observation room equipped with a one-way mirror. This class is used for the course Principles of Interview II (65315), and for group nutritional therapy. There is space in these two rooms for 15 observers and 15 participants.

A detailed map of the campus of the Faculty of Agriculture, Food and Environment is included in the Appendices. The classrooms and laboratories used by the School are listed in the following table:

Table 3.6.2.1. Lecture halls, classrooms and laboratories utilized by the study programs of the School of Nutritional Science on the Rehovot campus of the Hebrew University.

Classroom	Building	Seats	Instructor's computer	Projector
1	Franklin	63	+	+
2	“	126	+	+
5	“	48	+	+
6	“	29	+	+
15	“	155	+	+

Classroom	Building	Seats	Instructor's computer	Projector
104	“	56	+	+
8	Kennedy-Leigh	12	+	+
9	“	128	+	+
10	“	140	+	+
11	“	240	+	+
115	“	50	+	+
101	Library	58	+	+
102	“	60	+	+
103	“	41	+	+
105	“	25	+	+
106	“	42	+	+
108	“	88	+	+
109	“	67	+	+
AV-3	AV Center	30	+	+
AV-4	“	93	+	+
AV- Shelter	“	60	+	+
17	Aharonson	31	+	+
18	“	26	+	+
Auditorium	Ariowitsch	355	+	+
19	IKA	99	+	+
20	IKA	99	+	+
221	Field Crops	41	+	+
3114	Building H	80	+	+
Microbiology Laboratory	Ariowitsch B	64	+	+
Biochemistry Laboratory	Fribourg	25	-	-
Botany Laboratory	Franklin		-	-
Teaching Kitchen	Franklin	29	-	-

3.6.2.2. Do the parent unit and study program have access to additional facilities for special purposes, e.g. conference rooms, study centres, research centres and meeting rooms? If teaching activities take place outside the campus, please specify which activities and the frameworks in which they are carried out.

The study program has access to two departmental seminar rooms, the computer center, computer classrooms, and a large meeting room which is available all departments as needed. The Faculty Club contains a large hall which can seat 120; this hall is used by the School of Nutrition for departmental seminars, guest lectures, and graduate student progress reports, which are attended by staff and students. This hall often serves as a venue for symposia to which the entire campus is invited.

As part of their coursework, students participate in off-campus field trips to a number of sites related to their studies. The sites include:

- The Alon Tavor visitor's center of Tnuva, the largest food marketing concern in Israel
- The Sheba Medical Center in Tel Hashomer

- The Kaplan Medical Center in Rehovot
- The Tel Aviv facility of Abbott Laboratories, a large producer of nutritional products including individually tailored diets for enteral and parenteral feeding.

Students, particularly those in the third year of their studies, are encouraged to attend conferences held in Israel which are relevant to the field of nutritional sciences. Transportation to these events is often provided by the school.

3.6.3. Computerization: Please specify the computer layout, and how does it serves the study program. E.g., how many computer labs serve the students in the program, and how many computers are there in each lab? Specify the existing hardware and software, and state if it includes special hardware and/or software.

A basic computer infrastructure is supplied by the university through the Computation Authority (CA). The CA provides wired networks that cover every building in the campus; internet/email access for all researchers, students and administrative staff; central computational/data storage/backup ability (mainly by way of internet servers) and technical support. Software support can be obtained by researchers for a fee, on a per-hour basis, or by purchasing annual software insurance at a flat rate. The Rehovot campus network, accessible for all students on- or off- campus, provides individual folders for each faculty member to post presentations, reading assignments, syllabi and other course materials. In addition, all instructors can send messages/announcements to students using a user-friendly interface that allows messaging to the entire class, exercise groups, or individual students.

The following computer facilities are available to Nutritional Science students:

Lecture Halls

All lecture halls are equipped with

- networked computer (+ DVD)
- overhead LCD projector
- VCR
- Audio amplification

PC Labs

These labs are used for classes which require students to use a PC during the lecture.

When not in use for classes, they are available for self-study.

- 3 PC labs (with 20, 20 and 28 stations, respectively), plus Teacher PC
- All stations are connected to the HUJI network
- Up to date computers, equipped with headsets, DVD and USB ports
- Black & white and color printers, scanners, and DVD burners are available
- Overhead LCD projector for displaying the instructor's screen on a whiteboard
- Software for displaying the instructor's screen (or any other screen) on the students' screens

PC Center

The PC Center contains 50 stations for self-study. The PCs are equipped as described above.

Services for Students

- PC's for independent study (in labs and PC Center)
- Self-study PCs accessible 24/7
- Student HELPDESK in the PC Center
- Free internet access and e-mail accounts. E-mail accounts are supplied by Google, but have a HUJI address.
- PUBLIC Ethernet ports for connecting laptops
- Partial Wi-Fi coverage for laptops with wireless connections
- "Home Directory" – a networked area for personal files, accessible from any public PC as well as from a home computer

Software

- Internet, e-mail, Microsoft Office
- Mathematical and statistical software
- Course Materials on a networked drive, accessible on- or off-campus

Nutritional Science Software

An interactive human physiology program, purchased from A.D.A.M. Inc. (USA) for use in the Anatomy and Physiology course (65219), covers ten important body systems: cardiovascular, muscular, preparatory, nervous, urinary, fluids and electrolytes, nervous II, endocrine, digestive, and immune. The program includes animation, video segments and quizzes, all of which make the subject material highly accessible to the students. Each basic unit in physiology is presented through a preliminary set of goals and an anatomy review, and is followed by an in-depth quiz that evaluates mastery of the study material by engaging the students in activities requiring them to predict outcomes, play with variables, and measure responses.

The university has purchased Tzameret, the most up-to-date nutritional data base available in Israel, from the Ministry of Health. The Tzameret program calculates the nutritional value of individual recipes and daily food intakes, and allows for analysis of food frequency questionnaires. It also compares results to standard recommendations (DRI). This program is available in the computer rooms on campus.

3.6.4. Laboratories

What laboratories serve the program, who makes use of them, how are they equipped, and how many seats do they have?

The School of Nutritional Sciences makes use of four teaching laboratories, all of which either belong primarily to other study units or, in the case of the biochemistry and nutrition lab, are shared facilities.

The biochemistry and nutrition teaching lab is located on the third floor of the Fribourg building. The lab, which includes two rooms, each with a seating capacity of 25, is outfitted with extraction equipment, centrifuges, spectrophotometers, pH meters, and other standard biochemical instruments. The adjoining prep room is shared by the two departments.

The Institute of Plant Sciences offers a course in Plant Physiology for students of Nutritional Sciences. The laboratory section of this course is taught in the botany teaching lab on the second floor of the Franklin building. The Plant Protection laboratory, which is located on the top level of Ariowitsch B and seats 64, is used for a number of graduate courses offered by units outside the School of Nutritional Science, in which our students participate. Most of these courses are in the fields of biotechnology and food science.

The teaching kitchen, which seats 29, is fully equipped with digital balances, ovens, food processors, blenders, microwave ovens, serving dishes and a large number of bowls, pans and utensils. The kitchen is located on the ground floor of the Franklin Building.

3.6.5. Library and Information Technology (IT)

3.6.5.1. Describe the library, which serves the students and the teaching staff of the study program: location, physical structure, number of titles according to subjects, journals and e-journals, computerized databases, number of obligatory books relative to the number of students, opening hours, number of seats, number of computers, the library's professional staff and their qualifications. To what extent do the students receive assistance and guidance in the library, the ability of students and teaching staff to use the databases from outside the library? Specify likewise the policy guiding the purchase of material for the library: who make the decisions with regard to the purchase of books, journals, computerized databases etc. and based on which recommendations/requirements, what are the procedures for updating the library, is there a clear and well-defined budget for the library?

The Library of Agricultural, Food and Environmental Quality Sciences serves the staff and students of the Robert H. Smith Faculty of Agriculture, Food and Environment. The library, located at the center of the Rehovot campus, has undergone thorough renovations during 2011; the facility includes modern individual and group study spaces with wireless connections for personal laptops, up-to-date computer workstations, study rooms for small and large groups and a computer classroom.

The building has two stories. The ground floor includes library technical services (acquisition and cataloging), the interlibrary loan department, a staff room, a large collection storage room, classrooms, photocopy machines for student use, and a small lobby. The second floor contains the circulation and reference departments, the library administration, book and journal collections, a reading room, group study rooms including LCD, rest areas with comfortable sofas, an individual study area (quiet room)

and a computer classroom equipped with the latest in audio-visual and computer facilities.

Access to the second floor is by stairs or by a wheelchair platform stair lift.

The Collection

- 39,000 book titles
 - 10,000 titles in general sciences
 - 10,000 titles in plant science
 - 6,000 titles in animal science and veterinary medicine
 - 5,500 titles in nutrition and food technology
 - 4,000 titles in economics and hotel management
 - 3,500 titles in ground and water
- 50 print journal current subscriptions
- 26,880 electronic journals
- 100 electronic databases
- 80,000 volumes on shelves

Special collections

The Library of Agricultural, Food and Environmental Quality Sciences is the repository library for FAO publications in Israel.

The library is currently digitizing its entire collection of dissertations. They are available online through the library OPAC to the Hebrew University community only.

Required Reading for Courses

The Reserved Reading Collection is updated every semester. It includes textbooks and a database of scanned articles and book chapters based on the required reading lists submitted by course instructors. The library usually purchases an item for every 10 students. Access to the on-line database of scanned materials is open to students upon logging in with their personal identification code.

Circulation Services

The majority of monographs are circulated, and each patron may borrow up to 15 books simultaneously. The patrons themselves can enter hold requests into the system. Daily renewals are performed automatically by the Aleph500 system after checking that there are no requests for an item or problems with a reader. Materials unavailable in our collection may be obtained for a fee by inter-library loan from Israeli libraries and from abroad.

Library Hours

During the school year: Sunday-Thursday, 9:00-19:45

Summer hours: Sunday -Thursday, 9:00-17:45

Seating Capacity

There are 194 seats in the various spaces on the second floor, including the Reading Room, group study rooms, the computer classroom and a quiet area for individual studying. There are another 12 seats in the lobby on the ground floor.

Computer Stations and Printing Services

43 workstations are available to patrons. At the stations, library readers can search the library's catalogs, databases and electronic journals. Access is also available to the Internet, e-mail, Microsoft Office and many programs provided by the University Computer Authority. Wireless connection for students with personal laptop computers is accessible in all areas of the building. Library scanners and printers provide relevant services to all library patrons.

Library Staff

The library has a staff of 9 librarians, and also employs student assistants. All librarians have academic degrees in library science and several have advanced degrees. Our librarians are active in both inter- and intra-university forums.

Library Instruction and Reference Services

The reference desks provide professional face-to-face assistance during all library opening hours. General guidance during the busier hours is also provided at the circulation desk. Library orientation sessions are compulsory for new students at the beginning of their first semester. They are given by the reference staff and include explanations on the use of the OPAC and other resources as well as library policy. Second-year students must attend classes as part of their pro-seminar to acquaint them with the databases, digital materials and reference tools in their fields of study. The Reference Department staff has produced a number of YouTube training videos on library resources that are linked to our homepage and accessible from any computer.

Library Homepage

The library homepage <http://www.agri.huji.ac.il/library/menu.html> is arranged to help the student or researcher find material in his subject area. A detailed database page offers descriptions of each of our databases. All pages are in both English and Hebrew. Any patron who is in need of help can reach a librarian directly from the homepage and will receive a reply by email.

Library Systems Software

The Library uses the ALEPH 500 integrated library system. The Library Authority is currently investigating the Vufind library portal to replace the OPAC and the Ebsco Discovery system as a new discovery tool for university.

Access to Electronic Resources

Students, teachers and researchers can access the electronic journals and databases from any computer that is connected to the university network on- or off-campus. Electronic resources are accessible off-campus by entering a personal identification code. This

means that our electronic collection is accessible 24/7 to the entire Hebrew University community.

Collection Development

At the beginning of each academic year the Library Authority allocates an acquisitions budget to the Library of Agricultural, Food and Environmental Quality Sciences. Most of the budget is spent on journal and database subscriptions. Some subscriptions are acquired in cooperation with other libraries in the Hebrew University, as well as through Malmad (The Israel Center for Digital Information Services). Subscriptions to new databases are approved only after a trial period and evaluation librarians, researchers and instructors.

New acquisitions are selected from required reading lists, teachers' recommendations, publishers' catalogs, professional publications and on-line resources. Financial donations and book gifts help us to enrich the collection.

3.6.5.2. Do the institution and the study program take steps to enable the convenient access of the students with special needs to the study material and the different facilities, e.g. classrooms, laboratories, library? If part of the programs takes place on different campuses, how is equal opportunity of access to the facilities and equipment at the main campus ensured for all students?

The Ombudsman's Report of 1999 noted many problems in regard to accessibility of the various campuses of the Hebrew University. In response, a decision was made by the University administration to embark upon a process of improving accessibility to solve the problems identified. In order to accomplish this goal, experts in the field from [Shekel](#) - The Israel Center for Accessibility were initially charged with implementing an accessibility survey on the Mount Scopus Campus, the Edmond J. Safra Campus on Givat Ram and the Faculty of Agriculture in Rehovot.

The survey was undertaken between December, 2000 and April, 2001 and encompassed every building on all the campuses. In each building the problems of accessibility for people with mobility, visual and hearing disabilities were identified, and a range of possible solutions for these problems was presented. This extensive survey served as excellent raw material for the architects recruited by the University to prepare detailed work plans to address accessibility problems. In May, 2001 the survey was translated into English and served as a tool for fundraising.

The University identified a group of potential donors in the US who have a connection and commitment to the issue of accessibility. A sum of \$750,000 was donated this purpose. At the same time, the University submitted a proposal to the Fund for the Development of Services for People with Disabilities of the National Insurance Institute,

which agreed to match this donation, bringing the total project budget to a sum of \$ 1,500,000.

Although the Mount Scopus Campus was selected as the first to undergo the process of improving accessibility, since it is the largest of the campuses with more than 10,000 students attending daily, the overall policy was identical for all campuses: it was decided to place priority on the needs of people with mobility problems since the solutions in this area generally require the greatest financial investment. In addition, it was decided to operate for the benefit the hearing and visually impaired as funding became available. Central to the project was the "absolute solution approach", which allows no compromise on the quality of the solution, while striving to find cost effective solutions for implementation and maintenance.

In accordance with the 2001 survey, the Rehovot campus has undergone the following changes in order to increase accessibility:

1. Accessible parking spaces have been designated for the handicapped in all areas of the campus.
2. Public restrooms have been renovated for complete accessibility in most structures on the campus, including those buildings housing classrooms and administrative units.
3. Wheelchair ramps have been paved or constructed throughout the grounds.
4. Railings and handholds have been installed on all outdoor stairways.
5. Elevators have been upgraded or newly installed in all buildings of more than one story. The second level of the library is accessible by a stair lift, and the recent renovation of the building included the addition of infrastructure for an elevator, to be installed at a later date.
6. The newer dormitory facilities include units which are accessible for the handicapped.
7. The new library includes a number of lowered work stations.
8. An entrance ramp has been added to the campus cafeteria.

3.6.5.3. In summary, what are the points of strength and weakness of the physical infrastructure?

Strengths: The new teaching laboratory center is expected to greatly improve the state of teaching infrastructures for several departments; in the case of the School of Nutritional Sciences, the new facility will also make additional space available for research labs.

The complete renovation of the Library of Agricultural Sciences has provided the entire campus with a comfortable hi-tech study venue, outfitted with modern equipment and staffed by highly proficient and helpful personnel able to provide assistance and consultation on virtually any issue in the field of information technology. The library's

extensive collections, both print and electronic, make an important contribution to the level of instruction and research at the Faculty. The location of the library building in the center of the campus is also an advantage for all its users.

The computer center is an important component of the learning experience on the Rehovot campus. The staff is both knowledgeable and helpful to students and staff alike, and the degree of computerization of facilities and information is very high.

In the buildings used by the School of Nutritional Sciences, every room is wired for electronic communication, which enables the installment of the many instruments used in research that require a computer connection, and makes direct data streaming from the instruments to each student's bench space possible.

The School's administrative center in the Franklin building is well-situated and provides separate working space for each of the three secretaries. The waiting area for students is convenient, and the meeting room, although small, is adjacent to the secretaries' offices and communication lines, and is useful for meetings with a small number of participants.

We feel that the beautiful landscaping of the campus grounds is worthy of mention here, for its contribution to creating a pleasant working and learning environment.

Weaknesses: Without truly up to date equipment in the teaching labs, it is difficult to introduce students to modern methods and new research areas in the field of nutrition. Due to budget constraints, the labs lack equipment for real time PCR and gel electrophoresis, instruments for transcriptomics, metabolomics and proteomics, new microscopes (phase and fluorescent) and ultracentrifuges, and are not well-outfitted for molecular biology. For nutrition courses, there is a need for instruments used in measuring human energy status such as resting energy expenditure (REE) and resting metabolic rate (RMR).

The teaching kitchen, a central hands-on tool for Nutritional Sciences, has not been renovated since it was built over 30 years ago. Air conditioning was installed six years ago, along with a system of hoods above stoves to remove cooking odors and steam. It is imperative that the teaching kitchen be remodeled in the near future, but funding has not yet become available to make necessary upgrades to the infrastructure. There is a need to refurbish the plumbing system, retile the floors, and replace counter areas and storage cupboards and cooking stations with modern equipment are also lacking.

Problems associated with older buildings are expected to be solved by the move to the newly constructed teaching lab facility on the campus. These problems are still relevant, however, for the School's research laboratories. Our major difficulties center on issues of space, outdated plumbing, and ventilation, particularly proper venting of hoods. The upper level of Fribourg has an asbestos ceiling that urgently needs replacing. The location

of research labs in two separate buildings makes it difficult to use common equipment efficiently.

Chapter 4 – Research

4.1. What is the department's perception of research, and what are the expected outcomes?

The School of Nutritional Sciences bases its research program on a biological systems approach, in which each faculty member focuses on a particular area of research, all of which combine to provide an integrated, overall picture of the effect of nutrition on the human body. Research in the school is designed to provide a profile of the nutritional requirements for optimal human health, while clarifying the modes of action of nutrients in the framework of health, physiology, and pathology.

Faculty investigations emphasize basic research, with each researcher specializing in a different organ system, be it the digestive system, the nervous system, the skeletal system, the immune system or the endocrine system. Emphasis is placed on pathologies and unique traits recognized in local groups and subgroups, an approach for which Israel, with its highly heterogeneous ethnic and geographic population, is ideally suited. It is our expectation that the outcome of our research will provide us with a fundamental understanding of the key role of nutrition in health and pathology, which can be extrapolated to global populations. This unique approach also enables us to remain up to date and familiarize our students with the most current information and issues in the field of nutritional sciences.

4.2. What are the department's special strengths and uniqueness in research (areas, fields?).

The specific areas of research covered by the academic staff of the School of Nutrition are the effects of nutrition on bone health, avoidance of bone pathologies and bone destruction caused by nutritional imbalances, and investigation of the stages of bone development (Dr. Efrat Monsonego-Ornan); redox biology and the effect of nutrition and oxidative stress on the development of fatty liver and fatty liver dysfunction (Dr. O. Tirosh); the biological clock, metabolism and obesity (Prof. Oren Froy); pediatric nutrition (Prof. Ram Reifen); the effect of nutrition on maintenance of the gastrointestinal tract and the avoidance of pathologies such as cancer, inflammatory bowel disease and necrotizing intercolitis through proper nutrition (Prof. Betty Schwartz); the role of education in nutritional behaviour (Dr. Aliza Stark); and the effect of nutrition on brain health, particularly the development of Alzheimer disease (Dr. Aron Troen).

Our interest in the role nutrition plays both in maintenance of overall good health and in the prevention of pathologies is the common thread connecting these diverse fields of research. Since the majority of pathological conditions are known to be triggered by inflammatory processes, our general approach is based on the use of nutrients that help to prevent overt inflammation in various body systems. Although each of our researchers

focuses on a different body system, the basic commonality of our approach to nutritional research is evident in the numerous joint projects conducted among our faculty members. The research program of the School of Nutritional Sciences is unique in that we seek to develop practical, applied solutions to health related nutrition issues through basic research. We approach this basic research through investigation of nutrient-gene interactions at the level of each body system.

4.3 Please list the leading journals in the field (including ranking, if possible).

The leading journals in the field of nutritional sciences include publications in three major subject areas: 1) Nutrition and Dietetics; 2) Endocrinology and Metabolism; and 3) Gastroenterology and Hepatology. The most important journals in these areas are listed below.

1) Leading journals in Dietetics and Nutrition

<u>Journal Title</u>	<u>Impact Factor</u>	<u>5-year impact factor</u>
Annual Review of Nutrition	8.783	11.538
Progress in Lipid Research	8.167	13.224
American Journal of Clinical Nutrition	6.307	7.744
International Journal of Obesity	4.343	4.958
Proceedings of the Nutrition Society	4.321	4.531
Journal of Nutritional Biochemistry	4.288	4.207
Journal of Nutrition	4.091	4.543
Critical Reviews in Food Science and Nutrition	3.725	5.654
Nutrition, Metabolism & Cardiovascular Diseases	3.517	3.296
British Journal of Nutrition	3.446	3.569
Nutrition reviews	3.443	3.952
Obesity	3.366	3.666
Clinical Nutrition	3.274	3.626
Food Chemistry	3.146	3.606
Journal of the American Dietetic Association	3.128	3.722
The European Journal of Clinical Nutrition	3.072	3.191
European Journal of Nutrition	2.866	3.146
International Journal of Eating Disorders	2.797	2.955

2) Leading journals in Endocrinology and Metabolism

<u>Journal Title</u>	<u>Impact factor</u>	<u>5-year Impact Factor</u>
Cell Metabolism	17.350	19.021
Diabetes	8.505	8.509
Antioxidants & Redox Signaling	7.581	6.853
Trends in Endocrinology and Metabolism	6.562	6.943
Diabetologia	6.551	6.084
Journal of Clinical Endocrinology and Metabolism	6.202	6.460

Free Radical Biology and Medicine	6.081	5.791
Journal of Bone and Mineral Research	6.043	6.511
Reviews in Endocrine and Metabolic Disorders	5.365	4.271
Molecular Endocrinology	5.257	5.330
Journal of Pineal Research	5.209	4.369
Obesity Review	5.086	NA

3) Leading journals in Gastroenterology and Hepatology

<u>Journal Title</u>	<u>Impact factor</u>	<u>5-year Impact Factor</u>
Gastroenterology	12.899	12.432
Hepatology	10.840	10.912
Gut	9.357	9.663
Journal of Hepatology	7.818	6.624
Inflammatory Bowel Diseases	4.643	4.530
Alimentary Pharmacology and Therapeutics	4.357	3.825
Current Opinion in Gastroenterology	4.331	3.088
American Journal of Physiology-Gastrointestinal and Liver Physiology	3.258	3.576
Liver International	2.987	2.995
Journal of Gastroenterology	2.909	2.814

4.4. What are the research funds (in \$) of the institution, faculty/school, evaluated unit/study program in each of the last five years according to the source of funding: competitive sources, government/public funds, internal funds, other.

Table 4.4.A. Hebrew University School of Nutritional Sciences: total research funds, 2006–2010*,**

Year	Competitive Grants (\$US)	Internal Funds (HUJI)	Total
2006	877,750	--	877,750
2007	755,300	33,000	788,300
2008	897,400	52,500	949,900
2009	889,800	171,500	1,061,300
2010	349,500	179,000	528,500
(2011)***	(314,200)	107,500	(481,700)

Notes:

*The breakdown of funding by years is as follows: a multi-year grant is initially listed in the first year that funds were transferred, and in subsequent years according to the length of the research period. For example, if a research project was funded for 3 years, 2007-2010, the total sum of the grant was divided by 3 and appears in this table in the years 2007, 2008, and 2009. This is regardless of the fact that monies transferred in 2009 may be intended to fund the project into the year 2010.

** These figures show total funding, including sums not administered by HUJI.

***Only partial data were available for 2011, as several grant proposals are pending approval at the time of this report.

Table 4.4.B. The Hebrew University Faculty of Agriculture, Food and Environment: total research funds, 2005-2010.

Year	Total Research Funds (\$US)*
2005-6	11,500,000
2006-7	13,200,000
2007-8	14,000,000
2008-9	14,300,000 (est.)**
2009-10	16,000,000

*These totals include only those sums transferred to and administered by HUJI.

** Only partial data were available for 2008-9. The actual total may have been higher than that shown.

4.5. Please provide data on research students (master degree with thesis, doctoral degree): overall number (internal/external), sources of funding, level of funding, number of graduates (of the university, faculty/school, parent unit/study program) in each of the last five years.

The number of advanced degrees granted in the past 5 years by the Hebrew University, the Faculty of Agriculture, Food and Environment, and the School of Nutritional Sciences is summarized below:

Advanced degrees granted: The Hebrew University of Jerusalem					
Degree level	Year				
	2006	2007	2008	2009	2010
MSc (thesis)	698	706	764	638	741
MSc (non-thesis)	1093	950	905	792	782
PhD	287	307	323	297	345
Advanced degrees granted: The Faculty of Agriculture, Food and Environment					
MSc (thesis)	119	148	148	120	107
MSc (non-thesis)	24	22	22	16	13
PhD	40	43	28	27	33
Advanced degrees granted: The School of Nutritional Sciences					
MSc (thesis)	8	7	14	9	16
MSc (non-thesis)	1	4	3	2	2
PhD	1	2	3	1	--

The following table lists MSc and PhD students who are either currently active in the School, or have completed their degrees since 2006. The majority of these students have been supported financially by the research grants allotted to their respective thesis projects. Some may also be employed by the university as teaching assistants for courses offered by the school or by other university units, in accordance with the student's academic background.

Research Student	Supervisor(s)	Degree			Status	
		MSc w/thesis	MSc w/out thesis	PhD	Year completed	Ongoing
1	Avi Bar			x		x
2	Gili Solomon			x		x
3	Anna Idelevitch			x		x
4	Stav Simsa			x		x
5	Adi Reich			x	2009	
6	Netta Ohayun	x				x
7	Olga Salinikov	x				x
8	Vietriki Fraggiranki	x				x
9	Yoach Rais	x			2011	
10	Lee Roth	x			2011	
11	Tengana Dellea	x			2009	
12	Jenia Kosonovsky	x			2008	
13	Ety Yael	x			2007	
14	Harel Dan	x			2007	
15	Marina Dolgin	x			2007	
16	Julia Shahmeister	x			2007	
17	Geetika Bhargava	x			2009	
18	Idan Frumin	x			2010	
19	Guy Levkovich	x			2011	

Research Student	Supervisor(s)	Degree			Status	
		MSc w/thesis	MSc w/out thesis	PhD	Year completed	Ongoing
20	Liyan Haviv	Froy	x			x
21	Yoni Genzer	Froy	x			x
22	Sabina Nagler	Froy		x		x
23	Hadas Sherman	Froy			x	2011
24	Maayan Barnea	Froy; Madar			x	x
25	Joumana Talhami	Stark;	x			x
26	Merav Kenan	Stark;		x		x
27	Keren Davidson	Stark; Elyakim	x			x
28	Uri Labelsky	Stark; Endevelt	x			x
29	Roni Hasson	Stark; Zamir	x			x
30	Peace Nakito	Stark;	x			x
31	Abigail Navarro	Stark;	x			2010
32	Sarit Hartzman Harari	Stark; Constantini	x			2010
33	Hadas Regev	Stark; Reifen	x			2009
34	Itamar Shindlov-Erez	Stark; Gvion	x			2008
35	Vered Marom	Stark;	x			2008
36	Limor Gindy	Stark;		x		2007
37	Shimrit Bar El	Reifen			x	x
38	Oxana Katz	Reifen			x	x
39	Maya Moshe	Reifen			x	x
40	Tali Shaulov	Reifen		x		x
41	Anna Teverovski	Reifen	x			2010
42	Michal Alumot	Reifen	x			2010
43	Adi Regev	Reifen; Kerem	x			2010
44	Adi Gerbert	Reifen	x			2008
45	Kot Anyuar	Reifen; Ghebremesjek			x	2010
46	Roni Shapira	Reifen	x			2009
47	Einat Romach	Reifen; Uni			x	2009
48	Lovemore Nhkata	Reifen	x			2009
49	Eli Zinal	Reifen	x			2008
50	Tova Peri	Schwartz	x			2006
51	Taly Bresler	Schwartz	x			2006
52	Tammy Jaffe	Schwartz	x			2006
53	Jennifer Nataf	Schwartz	x			2006
54	Liraz Avraham	Schwartz	x			2007
55	Bat-Chen Wolff	Schwartz	x			2008
56	Tal Sigavi	Schwartz	x			2009
57	Yardena	Schwartz	x			2010

Research Student	Supervisor(s)	Degree			Status	
		MSc w/thesis	MSc w/out thesis	PhD	Year completed	Ongoing
	Kesselman					
58	Michael Feldman	x			2011	
59	Dana Davidovsky	x			2011	
60	Lili Nimri	x			2011	
61	Johanna Rudman	x			2011	
62	Dana Tal	x				x
63	Liat Abovich-Gilad			x	2007	
64	Iris Lavi			x	2010	
65	Chana Hoduro	x			2010	
66	Anna Algamas			x		x
67	Miriam Theilla			x		x
68	Amir Bein			x		x
69	Liron Nutman			x		x
70	Hofit Shilo			x		x
71	Adi Golani	x			2006	
72	Avital Artan	x			2009	
73	Ofeer Bachar	x			2007	
74	Bayissa Harew	x			2007	
75	Diana Vainberg	x				x
76	Miri Kravitz		x			x
77	Meir Hazkal	x				x
78	Anna Aronis			x	2008	
79	Erez Ilan			x	2008	
80	Noga Budick			x		x
81	Michal Simon			x		x
82	Sarit Anavi			x		x
83	Michal Levin			x	2009	

4.6. Are faculty members required to serve as advisors of senior projects, theses and dissertations? Are there criteria for assigning advisors to different research projects?

Successful supervision of research students and undergraduate projects is one of the criteria for academic advancement of faculty members within the university. The university views this activity as central to the role of its academic staff, both in terms of achieving research goals and as part of the institution's commitment to train new scientists.

Research grants generally include funding for graduate student scholarships, as it is these students who carry out the actual research in the laboratory and field, under the supervision of the faculty advisor. Specific research projects are directly connected to the topics of grants obtained by researchers, and students and advisors generally choose to work together on a given project by mutual agreement.

4.7. Please provide a list of publications in the last five years (only by the teaching staff of the evaluated study program) according to refereed journals, books (originals or editions), professional journals, conference proceedings, professional reports, etc.

A complete list of publications by individual faculty members of the School of Nutritional Sciences over the past 5 years is presented in the Appendix. The following table summarizes the total number of publications by faculty members of the school over the past 5 years, listed by categories.

Publication type	Peer-reviewed articles	Invited reviews	Book chapters	Invited lectures
Total Publications (2006-2011):	128	3	2	44

4.8. Is there a commercialization unit in the institution? Briefly describe its function: number of patents registered and where have they been registered.

Yissum, the technology transfer company of the Hebrew University of Jerusalem, is responsible for marketing the inventions and know-how generated by the University's researchers and students. Working closely with researchers and staff, Yissum actively focuses on making these technologies commercially viable. Over the past 47 years, Yissum has granted more than 530 technology licenses and is responsible for commercializing an array of successful products that generate over \$2 billion in worldwide sales every year. Yissum maintains strong relationships with the business community in Israel and abroad to advance the technologies and opportunities coming out of The Hebrew University.

The stated goals of Yissum are:

1. To protect, promote and market commercially promising inventions and know-how developed at the Hebrew University of Jerusalem;
2. To find the “right fit” for each intellectual property asset in the Yissum portfolio; and
3. To deliver, manage, and optimize knowledge transfer to the global market through a variety of business activities and services.

Faculty members of the School of Nutritional Science have submitted a total of 12 patent applications through Yissum to the patent authorities of the United States, The European Union, and Israel, and all have either been granted or are pending, at this date.

4.9. Please describe the research infrastructure: research laboratories, specialized equipment, budget for maintenance (level and sources of funding).

Each researcher in the School of Nutritional Sciences is responsible for establishing his/her own research laboratory and infrastructure. Specialized equipment is generally purchased using research funds; researchers often pool funds to purchase large or costly instruments cooperatively. New faculty members may submit an estimate of the initial costs of establishing and outfitting a suitable laboratory, and they receive start-up funding from the university to cover some of these initial infrastructure expenses. This funding may finance renovation and furnishing of laboratory space and acquisition of laboratory equipment. Most maintenance of individual laboratory facilities is at the expense of the researcher. The annual budget of the Institute of Biochemistry may be drawn upon for specific maintenance costs, if the administration of the Institute approves the expenditure.

The Institute has a common equipment room in the Biochemistry building, which contains a UV transilluminator, a UVP-Imagestore computerized system, a Mitsubishi Video Copy processor, a Fuji Phosphor-Imager apparatus, a Savan Speed-Vac concentrator-evaporator, a Bio-Rad Gene-Pulser, a Bio-Rad slab-gel dryer, a computerized Elisa Reader and a Flow Cytometry apparatus, Real Time PCR (ABI 7300) device, Elutriator rotor J6 Beckman, and a Laser Scanning Confocal Microscope (Leica). All common equipment is maintained and administered by the technical staff.

The Interdepartmental Equipment Unit, located on the Rehovot campus in the Volcani and Ariowitsch B Buildings, provides research equipment and analytical services to faculty and students, and to the general public. The unit is equipped with a variety of modern scientific instruments, and includes facilities in the areas of chemical analysis, ICP spectrometry, mass spectrometry and chromatography, electron and confocal microscopy, tracer counting and imaging, and gel imaging and photography. The unit also offers a cold room, walk-in growth chambers, and climate controlled incubators.

There are two animal facilities on the Rehovot campus, one for rodents with 12 h light/dark cycles, controlled temperature and metabolic cages, and a sterile pathogen-free (SPF) facility in the veterinary school, with 12 h light/dark cycles and controlled temperature. The animal facility on the Givat Ram Campus in Jerusalem is also available to researchers based in Rehovot.

A brief description of the equipment and resources of each research laboratory in the School is provided below:

Dr. Oren Tirosh's research facilities comprise 2 laboratory rooms and two offices. At the time of this report, the laboratory staff includes a technician with a 50% position, 3 PhD students, and 2 MSc students. The lab is equipped with general equipment such as a laminar flow hood, CO₂ incubators, regular and inverted microscopes, analytical balances, spectrophotometers, incubation baths, photographic equipment, transblotters, high speed centrifuges, cold-storage facilities and liquid scintillation analyzers. In addition, the lab is equipped with essential equipment for molecular biology technology: horizontal and vertical gel apparatuses, power supplies, environmental incubator shakers, PCR apparatuses, HPLC-EC, and a microfluorometer.

Dr. Efrat Monsonogo-Ornan's laboratory includes 2 rooms, as well as a tissue-culture laboratory containing the required incubators, inverted and upright microscopes equipped with an ultraviolet light source for fluorescent imaging and a computerized image-analysis system, a biohazard down-flow hood, and CO₂ incubators for cell culture. Her histological laboratory includes a microtome and equipment for embedding and staining of tissue sections, either or frozen or in paraffin. All equipment for immunohistochemistry and *in-situ* hybridization is available, as well as all basic stains. There is a computer system for histomorphometry, a microscope and binocular with video camera and monitor, darkfield, phase-contrast, regular and fluorescence optics as well as confocal microscopy. Micro-CT scanner, micro-mechanical materials testing device, and the software needed to analyze experimental results of bone micro architecture.

Prof. Betty Schwartz's research laboratory includes three rooms on the ground floor of the Fribourg building. The lab is equipped with an Olympus fluorescent 4000x microscope, incubators for cell culture, laminar flow and chemical hoods, and complete systems for work with PCR, western blot analysis, and various gels. The staff includes a technician with a 50% position and several research students.

Prof. Oren Froy's laboratory is equipped with molecular biology equipment, such as a PCR machine, protein and DNA/RNA gel electrophoresis apparatus, table centrifuges, a spectrophotometer, UV transilluminator and digital camera, pH meter, ovens, baths, autoclaves, shakers, balances, refrigerators, and deep freezers.

The following major equipment is utilized on a shared basis: ice machine, a cryostat, cold room, autoclave, high speed centrifuges, absorbance/fluorescence/luminescence microplate reader, a dark room, X-ray developer, real-time PCR system, a fluorescent microscope.

4.10. Please list grants, honors, fellowships/scholarships, etc received by faculty (senior and junior).

The following table (4.10.A) summarizes the research grants received by the academic staff of the School of Nutritional Sciences within the last 5 years. The total sum of the grant is shown, regardless of the number of researchers among whom the funds were divided, and whether or not the entire grant was administered by the Hebrew University. Further details appear in the CV of each individual researcher (see appendices). All sums have been converted to US dollars at exchange rates current for July, 2011: 1 Euro = 1.44 \$US, 1 ILS = 0.295 \$US.

Table 4.10.B presents prizes, honors and scholarships received by faculty members of the School.

Table 4.10.A. Research grants received by faculty members of the HUJI School of Nutritional Sciences, 2005-2010.

Research period	Granting Agency	Total sum (US\$)	Research Topic
Prof. Oren Froy:			
2005-2006	Lejwa	30,000	The role of the biological clock in intestinal defensin expression.
2006-2007	Nutricia Research Foundation	35,000	The effect of the biological clock on food consumption, well-being, and longevity.
2006-/2007	Milton Rosenbaum	18,750	Expression of the biological clock in depressive disorders
2006- 2010	Nestle	278,000	Food, wellness, and the biological clock
2007-2008	Danone Nutrition Center	12,500	Analysis of the signaling pathway by which food components enhance the expression of antibacterial proteins in the body
2008-2010	Nutricia Research Foundation	70,000	Effect of feeding regimens on circadian rhythms and life span
2008-2010	Hohenheim University	65,000	Functionality of the biological clock in mast cells
2008-2010	BSF	60,000	Effect of feeding regimens on circadian rhythms and aging-related biomarkers in mice
2008-2010	Remedia	29,000	Defensin carriers for better mucosal immunity in the digestive system
2009-2010	Yissumit (HUJI)	25,000	Defensin carriers for better mucosal immunity in the digestive system
2009-2011	Center for Nutrigenomics and Functional Food Research	62,000	Enzyme delivery by chocolate-hydrocolloid solid foam matrices (CSFM) - a novel functional food
2011-2014	Deutsche Forschungsgemeinschaft (DFG)	194,000	Role of the biological clock in the physiology of human and mouse mast cells and eosinophils

Research period	Granting Agency	Total sum (US\$)	Research Topic
Prof. Betty Schwartz:			
2005-2007	Israel Cancer Association	60,000	The role of HNF4 in carcinogenesis
2005-2007	Danone Nutrition Center	30,000	A new probiotic with anti-cancer effects
2006-2010	ISF	110,000	The role of HNF4 alpha in colon carcinogenesis
2008-2010	Fritz Thyssen Foundation	42,000	The role of Caveolin-1 and Raft-associated proteins in colon cancer progression
2010-2012	University of Hohenheim	65,000	The role of Caveolin-1 and Raft-associated proteins in colon cancer
2010-2012	Center for Nutrigenomics and Functional Food Research	62,000	Fungi as a source for novel components in functional foods
2011-2012	Remedia	29,000	Omega 3 and bone health
Prof. Ram Reifen:			
2005-2007	Tnuva Research Center	20,000	Probiotics in inflammation – mechanism of action
2006-2008	IMH	20,000	Mitochondrial function in colitis
2006-2008	IMH	52,000	Mitochondrial function of colitis
2006-2010	European Union Transfer of Knowledge (TOK)	1,700,000	Fatty acids and inflammation
2008-2011	Niedersachsen Foundation	212,000	HSP proteins in gut inflammation
2009-2010	Remedia	29,000	
2009-2013	ISF	68,000	Iron Regulatory Proteins in inflammation of the GI tract
2009-2010	Center for Nutrigenomics and Functional Food Research	31,000	Carriers for iron in animal model
2010-2013	IMA	638,000	Novel local crops for better nutrition
2011-2012	Mauburger Foundation	30,000	Nutritional intervention with novel foods
Prof. Oren Tirosh:			
2007-2010	ISF	120,000	Involvement of Nitric Oxide in Fatty Liver Dysfunction
2007-2008	Israel Diabetes Association	7,500	Signaling mechanisms linking the nitric oxide system with hepatic insulin resistance
2007-2008	Galmed Inc. (Yissum)	18,000	Biological properties of FABACs
2008	Remedia	29,000.	Pro-inflammatory effect of fat on Kupffer cells, and liver damage as mediators of insulin resistance

Research period	Granting Agency	Total sum (US\$)	Research Topic
2009	HUJI Fund for Innovative Research	12,000	Breeding of passion fruit as a functional food containing neuroprotective nutraceuticals
2010-2012	Hohenheim University	65,000	Protection against fatty liver inflammation by double targeted NO donor compounds
2010-2012	Center for Nutrigenomics and Functional Food Research	62,000	Genomic and functional study of the fatty liver syndrome following modulations with L-arginine and omega-3 unsaturated fatty acids
Dr. Efrat Monsonego-Ornan:			
2004-2007	BARD	150,000	Disordered angiogenesis in TD: the role of dithiocarbamates
2004-2007	IMA	75,000	The etiology of turkey leg problems
2004-2007	Poultry Board, IMA	33,000	Turkey leg problems: establishment of research facilities for characterization and investigation of mechanisms involved in the syndrome.
2004-2006	Volcani Center Bioinformatic Grant	220,000	Genomic approaches for prevention of poultry skeletal disorders
2007-2010	IMA	66,000	Genomic approaches for prevention of poultry skeletal disorders
2007	HUJI Career Development Award	24,000	Utilizing microarray technology for growth plate profiling
2007-2010	Poultry Board, IMA	66,000	The effect of management on skeletal quality in laying hens
2007-2010	ISF	180,000	Revealing the cellular pathways underlying inhibition and catch-up of bone elongation by mechanical loading.
2007-2010	ISF grant for specialized equipment for new faculty members	100,000	
2008-2010	The University of Hohenheim	60,000	The effect of mechanical loading on bone development and quality.
2008	HUJI	26,000	The role of Omega-3 in bone development
2009	HUJI Fund for Innovative Research	24,000	The role of MMPs in the delamination and migration of mamalian neural crest cells
2009-2011	Center for Nutrigenomics and Functional Food Research	62,000	The role of Omega-3 polyunsaturated fatty acids in bone development and its long term effects.
Dr. Aron Troen*:			
2003-2009	National Institutes of Health	2,100,000	Renal Transplantation, Homocysteine Lowering and

Research period	Granting Agency	Total sum (US\$)	Research Topic
			Cognition
2004-2009	USDA Cooperative Agreement		Nutritional Factors in the Prevention of Cognitive Decline and Aging
2007-2008	The Ross Aging Initiative – Seed Grant	41,494	The Study of Osteoporotic Fractures (SOF) Ancillary Study: Gene-Nutrient Interactions and Age-Related Diseases”
2008	?	12,000	Nutritionally-modifiable genetic risk for age related cognitive impairment.
2008-2011	Unilever N.V. – Tufts JM USDA HNRCA 4 Year Strategic Partnership	250,000	Cerebrovascular function
2010	San Francisco Coordinating Center, NIH Subcontract	75,949	Baseline B-vitamin status and response to B-vitamin homocysteine-lowering therapy in The Women’s Antioxidant and Folic Acid Cardiovascular Study
2010-2011	National Institutes of Health	34,110	

*Dr. Troen’s grants were received prior to his appointment in the School of Nutritional Sciences, and are not administered by HUJI.

Table 4.10.B. Prizes, honors and scholarships received by faculty members of the HUJI School of Nutritional Sciences.

Name	Prizes and Honors
Prof. Oren Froy	<ul style="list-style-type: none"> ❖ Outstanding Instructor, HUJI, 2006. ❖ Wolf Foundation Krill Prize for Excellence in Research, 2007. ❖ Best Poster, 10th Gordon Research Conference on Pineal Cell Biology, 2008. ❖ Most cited article, Endocrine Reviews, 2010
Prof. Betty Schwartz	<ul style="list-style-type: none"> ❖ Tabb Yanai Price for Best Cancer-related Research, 1995 ❖ Golda Meir Fellowship, 2002 ❖ Rector’s Price for Excellence in Teaching, 2004
Dr. Efrat Monsonego-Ornan	<ul style="list-style-type: none"> ❖ Young Investigator Award, 1st International Conference on the Growth plate, 2001 ❖ Kimron Veterinary Institute Award, 2005
Dr. Oren Tirosh	<ul style="list-style-type: none"> ❖ Lady Davis Fellowship, HUJI, 2000 ❖ Junior Investigator Award, 2002
Dr. Aron Troen	<ul style="list-style-type: none"> ❖ Alzheimer’s Association New Investigator Research Grant Award, 2002 ❖ NIH Postdoctoral Travel Award, 2003 ❖ Golda Meir Fellowship, 2010-11

Name	Prizes and Honors
Dr. Aliza Stark	<ul style="list-style-type: none"> ❖ Outstanding Lecturer at Medical Nutrition 2000 -The Israeli Dietetics Association, 2000 ❖ Awarded Young Investigator Grant to attend FASEB Summer Research Conference, 2001 ❖ Outstanding Instructor, HUJI, 2008-9

4.11 Please list cooperation activities by department members both in Israel and abroad.

Professor Betty Schwartz

Many of the research projects conducted by Prof. Schwartz have been carried out in cooperation with colleagues from the Institute of Biochemistry, Food Science and Nutrition, from other departments on the campus of the Faculty of Agriculture, Food and the Environment, and with other research groups in The Hebrew University of Jerusalem. In addition, joint research projects have been conducted with researchers from several other academic institutions, both in Israel and abroad. The following is a partial list of collaborations:

Within the Institute, a joint study was conducted with Dr. Oren Tirosh to test characteristics of long-lived alpha MUPA transgenic mice; the reduced susceptibility of the transgenic mice to the organospecific colon carcinogen dimethylhydrazine was demonstrated. Dr. Tirosh contributed as Co-PI in FACS technology, to show direct interactions of phytoestrogens on cellular activation.

In collaboration with Prof. Oded Shoseyov, her group isolated and characterized anticarcinogenic activity of a mold-derived protein (ACTIBIND), bearing ribonuclease (RNase). This mold protein was tested in Prof. Schwartz's laboratory according to *in vivo* and *in vitro* models of cancer, and proved to have antiangiogenic and antitumorigenic characteristics (papers and International Patents). Sequencing this protein allowed identification of a novel human homolog also classified as an RNase T2. A synthetic RNase T2 gene was designed, cloned, expressed and purified. This human RNase T2 exhibited similar antiangiogenic and antitumorigenic characteristics as the mold protein. This protein is now being tested in Teva as a possible anticancer and antiangiogenic agent in humans, with potential highly commercial value. Collaboration with Professor Bar-Eli from M.D. Anderson Cancer Center in Houston, Texas has allowed us to test the effects of human RNase T2 in additional human cancers and additional novel angiogenic-related systems.

Prof. Schwartz has worked with Prof. Yitzchak Hadar to isolate a low molecular alpha-glucan from edible mushrooms which has proven to be an outstandingly efficient pro-apoptotic agent in colon cancer cells; this work has produced 3 published papers and an additional one lately submitted. Prof. Hadar contributed novel biotechnologic

methodologies to isolate the fungal glucans. They are now testing the *in vivo* efficiency of these glucans when given in the diet. They have thus far proved to be effective anti-inflammatory agents when administered in the diet in *in vivo* and *in vitro* models of cancer and intestinal inflammation which were developed in Dr. Schwartz's laboratory.

A study in collaboration with Prof. Hadar and Prof. Oded Yarden has resulted in the isolation and ongoing characterization of a unique low molecular protein from fruiting bodies of the mushroom *Pleurotus ostreatus*. The protein, designated ostreolysin, has thus far been expressed in a bacterial-expressing system, and the researchers have generated a potent antibody. They are now trying to assess the antitumorogenic mechanism of action of this protein.

Prof. Schwartz and Dr. Efrat Monsonego-Ornan have been awarded two grants for joint research on the effect of omega-3 PUFA on bone development.

Cooperative work with Dr. Zvi Ludmir of the Institute of Biochemistry has enabled the identification of additional nutrients such as allycin, propolis, and saponins, and characterization of their anticarcinogenic and anti-inflammatory molecular activities in cells of the intestinal tissue.

Collaboration between Prof. Schwartz's group and that of Prof. Bar-Tana at the Faculty of Medicine of the Hebrew University of Jerusalem has yielded grants from the Israel Science Foundation and the Israel Cancer Society. These projects investigate the role of the transcription factor HNF4 alpha in colon carcinogenesis. It has been established, and published, so far that some fatty acids are pro-carcinogenic while others are anticarcinogenic. HNF4 is a transcription factor that undergoes differential activation or inhibition following binding of acylated fatty acids of diverse lengths. The researchers are interested in determining whether HNF4 is responsible for the differential cancer-related activities exerted by different fatty acids. Of particular interest is the differential effect of Omega-3 Fatty acids versus Omega-6 fatty acids.

Research dealing with the isolation of novel butyrogenic bacteria with convincing probiotic characteristics has been carried out cooperatively by Prof. Schwartz and Prof. Bodde of the University of Hohenheim, Germany. They have twice received grants for testing the efficacy of the novel probiotics in *in vivo* models of intestinal inflammation, and also in *in vitro* and *in vivo* models of necrotizing enterocolitis, a disease that remains the major cause of morbidity and mortality in premature infants.

Collaboration with Professor Lutz Graeve of the Department of Physiology and Nutrition, The University of Hohenheim, Germany resulted in funding from the Fritz Thyssen Foundation and the Hohenheim Foundation. Their joint studies dealt with the role of caveolin-1 on cancer metastasis, and have thus far yielded a very active exchange of students between the two Universities.

Prof. Oren Froy

Prof. Froy is actively engaged in numerous local and international collaborations, providing both scholarly and experimental expertise in clock-controlled feeding.

Internationally, he is actively engaged in various collaborations in Europe and the US and has recently been awarded a joint grant from the bi-national USA – Israel Science Foundation (BSF) together with one of the most prominent scientists in the field of circadian rhythms, Prof. Steven Reppert of the University of Massachusetts Medical School. Their collaborative research deals with the effect of feeding regimens on aging-related biomarkers in mice. Prof. Froy is also in contact with Prof. Francis Levi from University of Paris, who is a world leader in circadian rhythms and chronotherapy. Prof. Levi was one of the scientists invited to deliver a lecture in the conference organized by Prof. Froy in Switzerland in 2005. He has recently met with Prof. Michael Muller, Chair of Nutrition, Metabolism and Genomics, Division of Human Nutrition, Wageningen University, and Director of the Netherlands Nutrigenomics Consortium in order to start collaboration, and currently collaborates with Dr. Axel Lorentz from University of Hohenheim in Germany on the functionality of the biological clock in mast cells and allergy. Dr. Lorentz and Prof. Froy have funding from the University of Hohenheim and the German Science Foundation, and have exchanged students and techniques and published an article in the last 2 years. Contacts have been established with Dr. Michael Steinmetz from Georg August University, Goettingen, Germany with the aim of studying circadian metabolism of the mammalian heart.

Locally, Prof. Froy collaborates with several groups in different departments/faculties of the Hebrew University of Jerusalem, including Dr. Yael Heifetz on circadian rhythms and ageing in *Drosophila*, Prof. Zecharia Madar on circadian rhythms and obesity, and Prof. Amos Nussinovitch on development of functional foods. In addition, he collaborates and is in ongoing contact with two leaders in the field of ageing outside the Hebrew University, Prof. Ruth Miskin from the Weizmann Institute of Science and Prof. Vadim Fraifeld from Ben Gurion University. He also has collaborations with researchers in clinical studies, including Prof. Zeev Stoeber from Kaplan Medical Center on defensin level in SLE patients, Prof. Daniela Jakubowicz, Dr. Zohar Landau, and Prof. Julio Weinstein from Wolfson Medical Center on circadian rhythms in obese patients.

Dr. Aliza Stark

While Dr. Stark's position as a lecturer in the parallel track does not require that she participate in research projects, during the first years of her appointment she worked in collaboration with Prof. Zecharia Madar and several publications resulted from their work together. Since 2005, she has mentored M.Sc. students in both the non-thesis and research tracks and the results of several of these projects have been published in peer-reviewed journals. All of her research is in the field of community nutrition promotion, and requires minimal funding. She has received two research grants from the Joint-Ashalim, Israel and from Maccabee Health Services Research Fund.

Dr. Stark's current collaborations are with the Israel Ministry of Health-Central District, Maccabee Health Services, and with the Israel Defense Forces.

Dr. Efrat Monsonego-Ornan

Dr. Monsonego-Ornan is currently engaged in joint research activities with a number of colleagues both in Israel and abroad. Her overseas collaborations include work with Dr. Nicolai Miosge of Gottingen University, Germany, which focuses on the interaction of cartilage cells with their mechanical environment in healthy and osteoarthritic joints, which are available from human patients under the conditions of their grant. She is also involved in studies on the effects of loading on bone phenotype, in terms of architecture and mechanical properties in cooperation with Dr. Peter Fratzl of the Max Plank Institute, Germany, Prof. Ron Shahar of the Koret School of Veterinary Medicine at The Hebrew University, and Dr. Michael Grashorn of Hohenheim University, Germany.

In Israel, she is involved in joint research projects with researchers from the Hebrew University, including Dr. Dalit Sela-Donenfeld of the Koret School of Veterinary Medicine, and Prof. Arieh Gertler and Prof. Betty Schwartz, both faculty members of the Hebrew University Institute of Biochemistry, Food Science and Nutrition. Her joint research with Prof. Schwartz studies the effect of unsaturated fatty acids (PUFA) on bone development, using fat-1 transgenic mice, which are genetically modified to synthesize omega-3 PUFA. This model is superior to the conventional nutritional approach as it enables us to evaluate the pure effect of omega-3 from the very early stages of bone development during embryogenesis.

In cooperation with Prof. Gertler, Dr. Monsonego-Ornan is engaged in research on the cytokines secreted from adipose tissue, such as leptin, on bone development and properties, using mouse models (e.g. ob/ob, db/db). Her collaboration with Dr. Sela-Donenfeld questioned whether, by degrading the extracellular matrix, MMPs mediate delamination and migration of neural crest cells from the neural tube.

Dr. Oren Tirosh

Dr. Tirosh is currently conducting collaborative research with Prof. Zecharia Madar of the Hebrew University Institute of Biochemistry, Food Science and Nutrition and with Prof. Shlomo Sasson of the Hebrew University School of Pharmacy. His overseas research partners include Prof. Giuliano Ramadori of the School of Internal Medicine at the University of Gottingen, Germany, and Prof. Uwe Beifuss of the Department of Chemistry at the University of Hohenheim, Germany.

Dr. Aron Troen

Dr. Troen has a number of joint research projects both pending and underway with fellow researchers from the Hebrew University and with colleagues abroad. Locally, he has submitted grant proposals for collaborative research with Dr. Oren Tirosh of the

Hebrew University School of Nutritional Sciences and Dr. Alon Samech of the Hebrew University Institute of Plant Sciences on the subject of examining the efficacy of whole fruit and extracts of selected passion fruit strains on neuroprotection and cognitive function in animal models of neurodegenerative disease.

Dr. Troen's overseas collaborations include an NIH-funded project conducted in cooperation with Dr. Irwin Rosenberg, Dr. Tammy Scott and Dr. Paul Jauques of Tufts University to evaluate the cognitive benefit of B vitamins for lowering homocysteine in kidney transplant recipients. An additional project, on the subject of vascular risk factors in cognitive impairment, has been funded by an EU reintegration grant and continues an ongoing collaboration funded by Unilever with Sergio Fantini, Angelo Sassaroli, and Bertan Hallacoglu (PhD Student) at Tufts University Department of Biomedical Engineering and Irwin Rosenberg and Merav Shaul (Post Doc) of the Human Nutrition Research Center on Aging at Tufts University. This work focuses on translational animal models but has also evolved into two additional collaborative human pilot studies:

- a) A pilot collaboration with Mount Sinai School of Medicine and Tufts University using Near Infra Red Spectroscopy to evaluate cerebrovascular function in relation to cognition in the oldest old, with Michal Beerli, Vahram Haroutunian and Patrick Hof at Mount Sinai School of Medicine and The Fantini and Rosenberg Laboratories at Tufts University.
- b) A pilot study using Near Infrared Spectroscopy to evaluate cerebral circulation during hemodialysis with Dan Weiner and Mark Sarnak of Tufts University School of Medicine, as well as Tammy Scott of the Rosenberg Laboratory and the Fantini Laboratory.

Dr. Troen is also a co-investigator in an ancillary study of B vitamins and homocysteine and fracture risk in the Women's Antioxidant and Cardiovascular Study (WACS), with Deborah Kado (UCLA), Katie Stone (San Francisco coordinating center) and Jo Ann Manson (Harvard School of Public Health).

Prof. Ram Reifen

Prof. Reifen's past collaborations with Hebrew University researchers include cooperative research with Prof. Micha Naim on vitamin A and taste, with Dr. Zohar Kerem on saponins in chick peas, and with Prof. Betty Schwartz on lycopen availability. Additional projects have been conducted in conjunction with Prof. Zecharia Madar on apoptosis, and with Prof. Amos Nussinovich, on the topic of hydrocolloid sponges and vitamin A.

4.12. Please list the major consulting activities done by faculty.

Dr. Aliza Stark has acted as a consultant to the following agencies:

1. The Israel Ministry of Health

- Appointed to the professional advisory committee to reconstruct the "Israeli Food Pyramid Guide", 2005.
- Appointed to the advisory committee to the Minister of Health on licensing requirements for dietitians in Israel, 2008-2011.

2. The Israel Ministry of Social Services

- Appointed to the professional advisory committee for the National Free Lunch Program.

3. Israel Ministry of Education

- Academic consultant for the Tavlan experimental kindergarten, Ramat Gan, Israel. Nutrition education in children aged 4-6, 2006-present.

Professor Betty Schwartz's consulting activities are as follows:

1. Danone Center for Nutritional Research

- Nutritional consulting.

2. The Israel Council for Higher Education

- Consultant for textbook content

4.13. What is the level of synergy between research strengths and teaching needs at the various degree levels?

First-year undergraduate students are required to study basic sciences, and the general nature of these introductory courses precludes a direct connection with the research specializations of the instructors. After completing the initial study year, however, students have acquired enough background to delve into coursework that more closely reflects the research agenda of the School of Nutrition. During the second and third academic years, the research activities of faculty members take on a much more meaningful role in determining both the orientation of the program, and individual course content. By the end of the second year, some students begin research projects either directly through the school or in the framework of the Amirim program for outstanding students; in these cases, the research strengths of their faculty advisors is very significant.

Graduate level courses are based upon current research in the field of nutrition. As such, the course content is closely related to research conducted in the school. Each faculty member teaches one or two courses at the graduate level; these courses are built upon on the ongoing research conducted in his or her laboratory. In this way, the instructors are able to introduce graduate students to the most up to date information and current issues in their respective fields of expertise.

At all degree levels, the wide range of the research conducted by the school's faculty contributes directly to the extensive scope of the study program. Our biological systems approach, in which each researcher investigates the issues of health and pathology from the perspective of a different body system, is the foundation for the strong, multi-perspective scientific background received by our students.

4.14. In summary, what are the points of strength and weakness of the research, and are you satisfied with the research outcomes of your department?

The faculty members of the school perform high level research, publish their results in prestigious journals and serve on the editorial boards of those journals, and are well known and respected in the international research community, maintaining active cooperative research with colleagues at home and abroad. We feel that these are notable accomplishments.

However, the extensive teaching responsibilities placed upon the small number of faculty members and the technical staff of the school limits the time and resources available for research, as does the recent reduction in research funds available from Israeli granting agencies. The performance of meaningful research in the field of nutrition involves advanced techniques, costly equipment and highly trained technical personnel who will be able to devote at least some of their working hours to research activities.

The opportunity to serve as a teaching assistant is considered an important part of a graduate student's training as a scientist. In recent years, however, teaching burdens have increased dramatically with no corresponding increase in the number of teaching assistant positions funded by the university. As is the case for full-time faculty members, this situation affects the time and resources these students are able to devote to their own research, which affects the level of that research and of the school as a whole.

Chapter 5 - The Self-Evaluation Process, Summary and Conclusions

5.1. Please describe the way that the current Self-Evaluation process was conducted, including methods used by the parent unit and the study program in its self-evaluation process, direct and indirect participants in the process etc. What are your conclusions regarding the process and its results?

The self-evaluation process was conducted by the School of Nutritional Sciences in such a way the academic staff and administration were involved at many levels. In Rehovot, we were very ably supported and assisted by the Institute of Biochemistry, the Dean, the Associate Dean, the Office of Instruction, and units such as the Library, the Authority for Computation, and the Research Committee; In Jerusalem, we received much support from the Office of the Rector and the various branches of the Student Authority. All of these individuals and units were well aware of the importance of the process, and willingly helped us to collect and organize the information that was central to preparation of the report.

The self-evaluation process has led us to a number of conclusions. We see the process as a very positive experience for the School, and find that it created an opportunity for us to evaluate and appreciate our growth and performance over the years. The process and the written report also give expression to the enormous personal investment of the staff in the activities of the School, particularly in the areas of improvement of teaching, professional development, and student advisement. The process provided many opportunities for dialogue and communication among faculty members that do not always arise in the course of our day-to-day routine, and we feel this was very beneficial.

5.2. Describe the consolidation process of the Self-Evaluation Report, including its preparation and final approval (including a description of the contributions of staff members to the process).

A workshop organized by the Council for Higher Education on January 10, 2011 was attended by the Head of the School of Nutritional Sciences, Prof. Betty Schwartz, and two faculty members, Dr. Efrat Monsonego-Ornan and Dr. Oren Tirosh. Following the workshop, a meeting of all academic staff and adjunct instructors was held at the School in order to explain the process and ensure the cooperation and participation of the entire teaching staff. Prof. Schwartz took it upon herself to coordinate preparation of the report, with involvement of other faculty members.

After funding was secured from the Office of the Dean, a part-time administrative assistant, Ms. Ruthann Yonah, was hired to work with Prof. Schwartz in preparing the report. Two representatives of the Council for Higher Education came to the school in

early March to meet with faculty members, the Head of the Institute of Biochemistry, and the assistant and further explain the self-evaluation process.

At a subsequent meeting, the Dean of the Faculty, Prof. Ronnie Freidman, took responsibility for Chapter 2 of the report, and guaranteed the cooperation of all other administrative units, as needed. Prof. Schwartz and Ms. Yonah also consulted with the Vice Rector, Prof. Yaakov Schul, and discussed the preparation of the first chapter of the report, for which the Office of the Rector is responsible.

The actual writing process, including data collection and treatment, was conducted by Prof. Schwartz and Ms. Yonah over the course of several months and involved weekly or semi-weekly working sessions to monitor the progress of the report. Various topics, such as research goals, strengths, and weaknesses and the future of the study program, were actively discussed among the entire academic staff of the School in two additional meetings. Input was also obtained by sending periodic drafts to all staff members for comments and suggestions.

In early August the final draft of the report was sent for approval to the academic staff, the Dean of the Faculty of Agriculture, Food and Environment, and the Rector of the University. Revisions were made in light of comments, and the final report was submitted to the Council of Higher Education.

5.3. If a mechanism/structure has been decided upon for the future treatment of weaknesses that were highlighted by the self-evaluation activity, please specify it while referring to those within the institution who would be responsible to follow up on this activity. Please refer to the question: how do the institution and the parent unit intend to deal in the future with quality assessment and its implementation?

Since the School suffers a severe lack of teaching staff, we have requested that positions for adjunct instructors be added to the School's personnel quota. These positions would be filled by experienced clinical dietitians who are qualified to teach subjects not currently covered by the teaching staff, such as clinical nutrition, sports nutrition, and epidemiology. During the upcoming academic year, we will be able to hire several dietitians who will be employed as associate instructors ("morim amitim"). Under the conditions of their employment, they will conduct a certain amount of research and teach graduate level courses which are now lacking in the program. We would like to enhance the commitment of these instructors to the School by providing them with the same ranking and promotion scales as are in place for adjunct instructors.

Now that we have experienced the self-evaluation process, there will be further discussion at the School and Institute levels about future quality assessment. We will involve the Dean of the Faculty in these discussions, in hopes that our experience will have positive implications for other academic units in the Faculty.

The Hebrew University has adopted a monitoring and review process as a deliberate and systematic policy of proper administration. It is regarded as an integral part of the functioning of all academic units. Review and evaluation at regular intervals are essential in order to prevent stagnation and to allow for improvement, rectification of problems, adequate use of available resources and growth. The Committee's report is submitted to the Rector, and its recommendations are carefully studied by the reviewed units and the deans. The report is then discussed by the University's Committee for Academic Policy, which decides on steps to be taken both in the long and in short term. The person responsible for the reviews and the academic evaluation at the Hebrew University is the Vice-Rector, Prof. Yaacov Schul.

5.4. Is the full Self-Evaluation Report accessible? If 'yes' - to whom it is accessible and to what extent?

The full report will be accessible to the University administration, and to other interested parties upon request.