☘ THE OPEN UNIVERSITY OF ISRAEL

Department of Mathematics and Computer Science

SELF-EVALUATION REPORT

Computer Science

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Raanana 2012

The Open University of Israel
COMPUTER SCIENCE SELF-EVALUATION REPORT
Executive Summary

The Open University of Israel (OUI) is unique on the Israeli academic scene. Although it resembles other universities in its pursuit of excellence in teaching and research, it differs from them in its educational mission – wide accessibility to quality higher education, and in its main method of instruction – distance learning. The OUI is dedicated to the creation of university-level materials that are suitable for self-study and to the development and implementation of versatile means, including technological means, for support of learning.

Teaching and learning: At the OUI, students enroll in one or more courses each semester. The course materials (books, study guides, videotaped lectures, etc.) are sent to students before the beginning of the semester, with instructions for self-study and with homework assignments for the entire semester. The students study the materials mainly on their own, and submit assignments according to a predetermined schedule. The learning process is supported by detailed personal feedback on assignments and by various learning aids, printed and electronic. Tutorials held at study centers throughout the country, or via the internet, help to clarify and practice applications of the subject matter and encourage socialization with peers. At the end of the semester, students take monitored written final exams. Since assignments and exams are prepared in advance, the same pre-set high standard is preserved regardless of tutorial mode or student profile.

Academic staff: The OUI academic staff consists of senior faculty, course coordinators, and tutors. The senior faculty is the academic leadership; its members, who excel in research, initiate study programs and are in charge of developing all course materials. Senior faculty are also responsible for quality control and supervision of all ongoing instructional activities. Each OUI course is managed administratively and academically by a course coordinator. The course coordinator is responsible for the smooth, effective running of the teaching system. Coordinators prepare new assignments and exams for each semester, maintain the course website and enrich it with appropriate materials, participate in course revision teams, and hire and supervise tutors. Tutors, whose number in each course depends on the number of students enrolled and their geographical dispersion, conduct group tutorial sessions, grade homework assignments and provide personal support when necessary.

The Computer Science programs: The Math and CS department offers single- and dual-disciplinary undergraduate programs in CS, and a graduate program (MSc) in two tracks: thesis (research) and final paper. There are 11 senior CS faculty members, 33 course coordinators, and 67 tutors associated with the CS programs at the OUI. In 2010-2011, about 3,000 students took undergraduate CS courses (with approximately 5,000 course enrollments in total). 250 students took graduate CS courses (490 course enrollments); 214 students graduated from our undergraduate programs and 25 from our MSc program (11 in the research thesis track and 14 in the final paper track).

The main strengths and weaknesses that were pointed out in the self-evaluation process, and the actions that will be taken in order to improve the weak points that were found.

Strengths: Academic excellence: Our courses and programs are held to superior academic standards, and enable capable students to continue to advanced degrees or to transfer credits to other universities. The OUI study method increases students' independent study ability. The OUI pays serious attention to recruitment and training processes of the staff; as a result the academic standards are maintained, the tutoring level is high and the ongoing contact with students – extensive.

Equal opportunity and flexibility: Our programs increase access to higher education through open admissions for undergraduates, distance learning using advanced

technologies, and addressing the needs of special population groups. Flexibility in time, place, pace and teaching methods allows our students to excel in academic studies alongside demanding careers or other obligations.

Academic quality assurance and learning outcomes: The OUI system ensures preservation of quality, standards and high control of learning outcomes, from the initial stages of course planning, via its rigorous development procedure, to actual course operation and the examination system. We view stability in academic standards as one of our major advantages over traditional methods of higher education in which academic standards may differ from year to year, depending on teaching staff or student body.

Broader impact of our program – a gate to higher education in Math and CS: Thanks to our unique method of study, combined with our insistence on academic excellence, our programs open a gate to high education for students who choose to pursue a limited program. These include students who use our "bridge" program to begin their studies at the OUI and then directly enroll in second year studies in any university in Israel; employees in the high-tech industry, or young students who take Math and CS courses (e.g., during high school or military service), which may serve as a step toward continuing their studies in other universities.

We continuously strive to achieve **broader impact of OUI CS course materials** on Israeli academia: Currently, our CS course materials are mainly used by OUI students. We aim to develop written and filmed course materials that can serve both OUI students and students in Israeli higher education in general. Future actions to fulfill this goal are planned.

The lack of a PhD program is a major weakness and we view this as a major goal. As with our thesis track MSc program, but much more so, a PhD program will serve as a stimulus for research and academic excellence in the department and its programs. We view the success of our research oriented MSc program as a step toward a full research graduate program that includes a PhD.

The extent to which the Study Program has achieved its mission, goals and learning outcomes. Are the Institution, Parent Unit and Department satisfied with the outcomes of the Study Program?

We believe that our programs achieve the OUI mission of facilitating access to higher education through a system that offers equal opportunity via open admissions, and does not require adherence to specific yearly loads or regular classroom attendance; promoting academic excellence, both in research and higher education and providing a suitable framework for academic and professional advancement in CS to promising candidates who cannot study at traditional universities. Two key ingredients assure the academic excellence of our programs: a rigorous and extensive peer review process of programs and study material; and the strict separation of academic requirements from student profiles, in which our course material is based on pre-set academic standards, independent of the extremely heterogeneous student body.

Learning outcomes: Our undergraduate programs impart the theoretical and applicative background our graduates need to continue to advanced CS graduate studies, as well as the high-tech job market. Our graduate program provides graduates with the ability to independently acquire knowledge in advanced theoretical and applicative aspects of CS, and to have deep understanding in their area of expertise.

Briefly describe the main changes that have been made in the program since the last evaluation

Since 2006, we have **recruited** five new senior faculty members and **developed** several advanced research-oriented **graduate** courses so as to better support our research MSc program. **Undergraduate course material** has been thoroughly updated and enriched and distance learning **technologies** were greatly broadened to support students in peripheral areas.