



Committee for the Evaluation of Chemistry Study Programs

Tel Aviv University

The Raymond and Beverly Sackler Faculty of Exact Sciences

Sackler School of Chemistry

Evaluation Report

March 2012

CONTENTS**Chapter 1:**

Background.....2

Chapter 2:

Committee Procedures.....3

Chapter 3:

Executive Summary4

Chapter 4:Evaluation of Chemistry Studies at Sackler School of Chemistry at
Tel Aviv University.....5**Appendices:** Appendix 1 – Letter of Appointment

Appendix 2 – Schedule of the visit

Chapter 1- Background

At its meeting on July 14, 2009, the Council for Higher Education (CHE) decided to evaluate the study programs in the field of Chemistry in higher education in Israel.

The initial steps by CHE included the formulation of a self-evaluation study for each participating institution and the appointment of an evaluation committee consisting of:

- Professor Richard Eisenberg, Department of Chemistry, University of Rochester, Rochester, NY
- Professor Allen J. Bard, Department of Chemistry, University of Texas, Austin, TX
- Professor Tobin J. Marks, Department of Chemistry, Northwestern University, Evanston, IL
- Professor William L. Jorgensen, Department of Chemistry, Yale University, New Haven, CT¹
- Professor Joan S. Valentine, Department of Chemistry, University of California - Los Angeles, Los Angeles, CA
- Professor David Milstein, Weizmann Institute of Science, Rehovoth

Each of the committee members is a research active chemistry faculty member with broad disciplinary experience. Each non-Israeli member is a member of the U.S. National Academy of Sciences and is fully involved in all aspects of chemistry programs at the graduate and undergraduate levels.

The committee was assisted in its efforts by Ms. Alisa Elon, Coordinator of the committee on behalf of the Council for Higher Education.

Within the framework of its activity, the Committee was requested to submit the following documents to CHE:

1. A final report on each of the evaluated departments,
2. A general report on the state of the discipline in the Israeli higher education system, including recommendations to the CHE for standards and potential state-wide changes in the evaluated field of study.

The Committee's letter of appointment is attached as **Appendix 1**.

The process was conducted in accordance with the CHE's Guidelines for Self-Evaluation (of October 2009).

¹ Prof. William L. Jorgensen was not able to participate in the visit to Tel Aviv University for personal reasons.

Chapter 2- Committee Procedures

The Committee held its first meetings on June 12, 2011 during which it discussed fundamental issues concerning higher education in Israel, the quality assessment activity, as well as Chemistry study programs.

In June 2011, the Committee held its first round of visits and went to Ben-Gurion University of the Negev, Bar-Ilan University, and the Weizmann Institute of Science. The second round of visits was carried out in December 2011 with site visits to the Hebrew University, the Open University, the Ariel University Center of Samaria, the Technion Israel Institute of Technology, and Tel Aviv University.

This report deals with the evaluation of chemistry studies at the Sackler School of Chemistry at the Tel Aviv University

In preparation of this report, the committee met with TAU administrators, senior and junior faculty, and students at the bachelors, masters and doctoral levels. The analysis given below reflects the results of those meetings coupled with the information provided by TAU in its self-evaluation study.

The Committee's visit to the Tel Aviv University took place on December 20-21, 2011. The Committee thanks the management of the Tel Aviv University and the Sackler School of Chemistry for their self-evaluation report and for their hospitality towards the Committee during its visit at the institution.

The schedule of the visit is attached as **Appendix 2**.

Chapter 3-Executive Summary

Several points, which are included in the General Report by the Committee, and other points specific to TAU need to be addressed to maintain the positive momentum of the Department. In general, the Committee recommends changes in the requirements for undergraduate and graduate programs to promote more research and active learning in the undergraduate degree program, and to facilitate and streamline the path to the Ph.D. degree at the graduate level. For the former, more undergraduate research and reduction in the number of formal courses is advocated, while for the latter, the Committee advocates that students beyond the first degree enter the "Direct to Ph.D. program".

Other specific Committee recommendations:

- Modify the undergraduate program to encourage undergraduate research during the academic year. Undergraduate research allows students to experience the excitement of investigative research and plays an important role in furthering the transition of undergraduate students into functioning scientists.
- Introduce more scholarships for B.Sc. students to enable undergraduate research during the summer.
- Monitor the dropout rate closely and take measures to reduce it when it becomes excessive.
- Problems with introductory math courses and physics laboratory discussed in the report should be addressed.
- The Advanced Analytical instructional laboratory should be made fully operational, and preferably located in an unshared laboratory space.
- The offerings of catch-up courses in science and math in the summer prior to entering the university should be enhanced.
- Efforts should be made to raise stipend levels to account for the very high cost of living in the Tel Aviv area.
- Students entering graduate study should be encouraged to enroll in the "Direct to Ph.D." program, and criteria for enrollment should be more flexible.
- Career counseling for graduate students at all levels is recommended.
- Graduate student admission should not be linked to financial considerations of any specific faculty member.
- Ph.D. students should receive more frequent feedback from their Thesis Committee throughout their program of study.
- Hiring of new faculty is expected to continue on an annual basis. Eight new hires should be made over the next 5 years. Greater effort should be made in searching for new faculty members within the international community.
- Pro-active recruitment of female faculty members should be undertaken.
- The timing of tenure decisions should be extended by two years.
- Commencement of renovations for new appointments should be undertaken before new faculty arrives, with every effort to complete the renovation within 3 months of arrival.

Chapter 4: Evaluation of Chemistry Studies at the Sackler School of Chemistry at Tel Aviv University

- *This Report relates to the situation current at the time of the visit to the institution, and does not take account of any subsequent changes. The Report records the conclusions reached by the Evaluation Committee based on the documentation provided by the institution, information gained through interviews, discussion and observation as well as other information available to the Committee.*

Background

Tel Aviv University (TAU) is a large, modern research university with more than 33,000 students of which 20,000 are at the first degree level. The School of chemistry is part of the faculty of Exact Sciences, which also includes Mathematical Sciences, Physics and Astronomy, and Geophysics and Planetary Sciences. In 1965, the School of Chemistry was established based on the American model of a single research-teaching entity. Department specialities include: physical chemistry, theory, chemical physics, magnetic resonance, organic and organometallic chemistry, and electrochemistry.

The general impression given to the Committee during the visit was of a dynamic program with talented faculty, particularly at the junior level, who will continue to make TAU an internationally recognized center of learning and scholarship in chemistry.

Undergraduate Program

The Sackler School of Chemistry at Tel Aviv University (TAU) provides a rigorous, high quality chemistry program for undergraduate chemistry students and also serves an important role in providing service courses for a large number of undergraduate students in other fields of study. Two types of undergraduate degree programs are offered: the chemistry major itself and double major programs in which chemistry is combined with biology, physics, mathematics, computer sciences, geophysics, or a non-natural science. In 2009, there were 85 students in the chemistry major program, 90 in the chemistry-biology double major, and 21 students distributed between the other chemistry double major tracks.

To graduate from the B.Sc. program with a single major in chemistry, a student is required to obtain a total of 166 semester credits. In the single chemistry major program there are 123 hours of obligatory courses and 43 hours of elective courses, giving a total of 166 hours. Those hours include 52-59 hours of obligatory laboratory courses. In the double major Chemistry and Biology program, there are 93 hours of obligatory courses and 9 hours of elective courses, giving a total of 102 hours in chemistry only. Within those hours, there are 22 hours of obligatory laboratory courses. In addition, there are 62 hours in biology, with 43 hours of obligatory courses, 15 hours of elective courses, and 5 hours of obligatory laboratory courses.

A student can enter the B.Sc. programs in chemistry only at the beginning of each year, and it is expected that he or she will complete all of the required courses within three years, but often students extend their undergraduate studies to 3.5-4.0 years. The Committee believes that the three-year programs in chemistry are too compressed. Many of the students cannot finish these programs within the three years and must extend their programs beyond that time. Moreover, the curriculum is so packed that most students do not

have sufficient time available to participate in undergraduate research, which the Committee believes is an important component of an excellent undergraduate chemistry program. The Committee recognizes that the School of Chemistry is aware of this problem and strongly endorses its plans to offer a new major program in chemistry with emphasis on research for those students who are highly qualified for it.

Incorporating undergraduate research more extensively into the undergraduate program can be accomplished by limiting the number of upper level elective courses first degree students can take and making those courses available at the M.Sc. level. With the reduced number of upper level lecture courses, students would be able to participate more extensively in a research project course. The Committee believes that this goal can be achieved by offering undergraduate research as an elective in the third year and by changing some of the required chemistry courses to elective. Education is an ongoing process and learning is not developed only by formal courses. Teaching students how to think both critically and creatively should be paramount relative to the transfer of knowledge.

The Committee recommends further that summer scholarships be made available for talented undergraduates to carry out research projects in the laboratories of faculty members in the first or second year, with the hope that this activity will continue during their final year of undergraduate study. A capstone event such as a departmental undergraduate research poster session or an undergraduate honors thesis should be considered. In the same vein, programs are needed (not necessarily courses) that expose undergraduates (and graduate students) to career options in chemistry and allied fields such as exposure to industrial chemistry and chemists, and to I.P. concepts.

In the self-evaluation report, the School of Chemistry reports that future plans include: (1) a compulsory basic inorganic chemistry course, (2) modification of the basic biochemistry course for chemists to include selected topics in molecular biology, (3) re-evaluation of the electrochemistry courses due to retirement of the experts in this field, and (4) adding a basic course in statistics. The Committee endorses these plans, with the stipulation that instruction in analytical chemistry, which includes electrochemistry, be retained in the curriculum, especially since this is a historical TAU area of strength.

Although most of the lecture and laboratory courses required for the TAU chemistry programs are excellent, there are some that need attention. Of those taught by chemistry faculty, the most urgent problem is the analytical chemistry laboratory course: the instructional equipment must be updated, and the teaching laboratory must occupy space separated from that for research. The required mathematics courses also need attention from the chemistry faculty to be sure that they cover the appropriate material at a high enough level to prepare students for advanced degrees. Students should be advised to take the more rigorous course options in math if their interests are in physical, theoretical or computational aspects of chemistry and their pre-college preparation is adequate. The required laboratories in physics also need modification to ensure that the theoretical background for each experiment is taught prior to each required experiment in the laboratory.

According to the self-evaluation report, the yearly dropout rate for students in the B.Sc. programs in chemistry has been very high in recent years, reaching more than 50% in 2006. However, the numbers of dropouts reported are much lower for 2008, the most recent year listed in the report, i.e., 10% in the single chemistry major program and 18% in the double major programs. Hopefully these lower rates have continued in subsequent years. If not, then the high drop out rates are a problem that needs to be addressed.

Students indicated that it would be very valuable to have the option of enrolling in an intensive summer-long catch-up course in math, physics, and chemistry after military service and prior to entering the university.

Recommendations

- **Modify the undergraduate program to encourage undergraduate research during the academic year. Presentation of seminars by research active faculty will also stimulate interest in undergraduate research.**
- **Introduce more scholarships for B.Sc. students to enable undergraduate research during the summer.**
- **The dropout rate should be closely monitored and measures taken to reduce it when it becomes excessive.**
- **Problems elaborated above with the analytical chemistry laboratory, introductory math courses, and physics laboratory should be addressed.**
- **The offerings of catch-up courses in science and math in the summer prior to entering the university should be enhanced.**

Graduate Program

The chemistry graduate program in the Sackler School of Chemistry at Tel Aviv University (TAU) is generally strong and healthy. Well-qualified highly motivated graduate students are attracted by the diversity of excellent faculty research programs, the TAU reputation for excellence, impressive shared instrumentation facilities for chemical and materials research, and the ambience of Tel Aviv as a place to live. The graduate curriculum offers a wide variety of, and flexibility in, course curriculum and thesis research topics. Currently there are approximately 50 students in the M.Sc. program and 100 in the Ph.D. program.

Students typically enter the TAU chemistry graduate program as master's (M.Sc.) students, and the M.Sc. program typically requires 2.0-2.5 years. A large percentage of the entering graduate students are TAU alumni, but they can only enter the graduate program by being formally accepted into a faculty member's research group. In this regard, the department provides advising to help students choose a faculty mentor. Most students aspire to a Ph.D. degree, and after one year have the option, if qualified, to switch to a direct Ph.D. track. The direct track is discussed further below. Alternatively, students can remain in the M.Sc./Ph.D. sequence. All M.Sc. students are supported for their first year on a scholarship, which requires no teaching and is funded 50% by the university and 50% by their thesis mentor's grants. TAU Chemistry offers a number of "premium" scholarships for exceptional students with significantly enhanced stipends. M.Sc. students serve as TAs in their second year, with a maximum load of about 10 hours/week, and with an increased stipend level. The Committee recommends that TAs be given more mentoring in the teaching of undergraduates, and that professors regularly meet with the TA staff in their respective courses. Beginning next year, all graduate level chemistry courses at TAU will be taught in English (if the instructor is English-speaking), and all exams will be given in English, which is commendable. TAU chemistry theses are in English with a Hebrew summary, which is also commendable.

The graduate Ph.D. program at TAU is typically a 4.5 – 5.0 year program after the M.Sc., although about 30% of the students enter a direct track program, requiring approximately 5 years from the B.A. degree. At present, admission to the direct Ph.D. track requires a written and oral exam in which the student defends his/her thesis problem in front of their Ph.D. committee.

The large number of required course credits in graduate education (for clarification, the courses are generally electives but the course credits are required) together with teaching obligations at most institutions (and with family obligations for many of the students) often result in the M.Sc. program requiring 2.5-3.5 years for completion, rather than the allotted 2 years, and the Ph.D. program requiring 4.5-5.0 years (or longer) rather than the allotted 4 years. The net result is that the time from entrance into the M.Sc. program until Ph.D. completion stretches from the programmed 6 years to more than 7 years to complete.

The Committee regards this length of time as too great and believes that it can be shortened significantly (>1 year) by elimination of some formal course credit requirements and the more general adoption of the "Direct to Ph.D." program that all universities have. At present, the "Direct to Ph.D." program is open to students above a high grade point cut-off or possibly after the first term of the Master's program. The Committee believes that the "Direct" path *should be more generally adopted*. For a graduate student body that commences studies at a more senior age than their American or European counterparts, the reduction in time to the Ph.D. degree by 1 or more years is important.

All students in the Ph.D. program are required to teach for the first four years, which affords an increased stipend. With regard to course requirements, there is a need for more specialized courses at the graduate level (e.g., synthetic organic chemistry), and the Committee again recommends that students use Ph.D. course selection to broaden their disciplinary backgrounds and to take courses that stress self-learning. Additionally, lessening of the number of course credits in the Ph.D. program should be considered since substantial numbers of course credit hours are fulfilled as students move through the combined M.Sc./Ph.D. program.

All Ph.D. students, including direct track students, meet twice during their graduate career with their Ph.D. committee as part of the degree program requirements. For the first exam, students must provide a written and oral presentation on their understanding of their thesis project and research progress in the second year of the program. The second exam is their final thesis exam. Students can give these presentations in either Hebrew or English, which the Committee feels is a positive aspect. The Committee recommends that students meet at least one additional time with their thesis committee to obtain feedback on their progress toward the degree. Overall, chemistry faculty members are very approachable to graduate students at TAU, and there appears to be excellent communication between faculty and student.

Recommendations

- **Efforts should be made to raise stipend levels to account for the very high cost of living in the Tel Aviv area.**
- **Students should be encouraged to enroll in the "Direct to Ph.D." and criteria for enrollment should be more flexible.**
- **Sufficient elective courses that are relevant to particular graduate research programs should be offered.**
- **Graduate level courses should emphasize self-learning.**
- **Career counseling for graduate students at all levels is recommended.**
- **Graduate student admission should not be linked to financial considerations of any specific faculty member.**
- **Ph.D. students should receive more frequent feedback from their Thesis Committee throughout their program of study.**

Faculty

The Sackler School of Chemistry is one of the five schools in the Faculty of Exact Sciences with B.Sc., M.Sc., and Ph.D. programs. There are 28 senior active faculty members engaged in teaching and research (15 professors, 5 associate professors and 8 senior lecturers), as well as 7 emeriti who also teach in the undergraduate and graduate programs. In addition 4 adjunct lecturers who hold doctorate degrees and about 96 Junior Academic Staff (TAs) from graduate programs participate in the teaching of the laboratory and lecture courses.

The size of the chemistry faculty has decreased significantly over the past 10 years from more than 34 to the present level of 28. While there is generally satisfaction with a projected level of 30, about 5 retirements are anticipated over the next 5 years, and it is vital that 7 new faculty be hired over this time period. If this plan can be maintained, a good mix of junior and senior faculty will result. The selection of the best candidates is vital to maintain the current high quality of teaching and research activities in the school. Such new hires can reflect themes of the new centers of excellence or the basic programs of the school as decided by quality of the candidates and the needs of the school.

The Committee has the perception that even a prestigious faculty such as at TAU has difficulty in recruiting excellent young scientists from traditional pools. Perhaps, while recognizing the special circumstances in Israel, casting a broader net for faculty recruiting is advisable. Currently, the approach is largely ad hoc and confined to Israeli Ph.D.'s who apply after a postdoctoral experience abroad. Announcement of faculty openings in international journals such as *Science* and *Nature* should be considered along with notification of distinguished scientists in the field, who may have current or former co-workers to recommend. All aspects of the scientific environment at the TAU are competitive with those at the most distinguished institutions worldwide. Therefore, efforts to recruit the best faculty available should be done.

Consideration of pro-active recruitment of female faculty members should also be given in view of the fact that only 7% of the Chemistry faculty are female, while more than 50% of the graduate students are female.

The startup packages for new faculty at TAU are adequate and competitive with those at other top universities worldwide. One undesirable aspect of new faculty startup at TAU is the length of time often required for the needed laboratory renovations. Remodeling activities appear to start only after arrival of new faculty members, so that they can advise on the nature of the renovations, but this can then delay research program initiation by as much as 1.5 years. In the case where a new faculty member has experienced considerable delays in the availability of research space, this should be taken into consideration in the timing of a tenure decision. The Committee was told that these problems have been recognized by the administration, and the Committee continues to urge actions to assist new faculty in beginning their research programs.

The junior faculty members appear satisfied with the general mentoring by the senior faculty and they also network among themselves. The teaching loads of the junior faculty are reasonable, with one or two semesters of relief from teaching in their first year to allow time for research startup. The Committee recommends that a more formal program of periodic evaluation of junior faculty member performance be introduced to provide feedback to them on how well they are performing relative to institutional expectations, and perhaps some teaching relief in the year before tenure decisions to allow for needed writing and external lecturing activities. The time allowed for tenure at TAU is shorter than at other universities in Israel, where a tenure package is prepared and outside letters

solicited after 4 years. Extension of the tenure clock by another two years (a maximum pre-tenure time of 7 years) seems reasonable, while maintaining the possibility of earlier tenure decisions for the strongest candidates. The Committee understands that at least 95% of junior TAU chemistry faculty is successful in promotion to tenured positions. The junior faculty the Committee met with was very impressive and highly motivated.

Recommendations:

- **Eight new hires should be made over the next 5 years.**
- **Greater effort should be made in searching for new faculty members in the international community.**
- **Pro-active recruitment of female faculty members should be undertaken.**
- **The timing of tenure decisions should be extended by two years.**

Research

Research activities in the Sackler School of Chemistry are strong. The organization of the School is unique in subdivision of the faculty into three departments: Organic Chemistry, Physical Chemistry and Electrochemistry, and Chemical Physics. An alternative arrangement, recognizing other traditional fields of chemistry such as Inorganic Chemistry and Analytical Chemistry, or different common themes such as Synthesis, Dynamics, Structure, Interfaces, Polymers, etc. and could be considered and may help in attracting graduate level students interested in these areas.

Most current and emeritus faculty members of the University are well known in the international chemistry community. Their success and high productivity are reflected by all citation measures, competitive research grants, and prizes as summarized in Section 4.2 of the self-evaluation and the School of Chemistry research report (2008-2009). The recent rate of publication is ca. 160 articles per year, with many in highly ranked journals; this is impressive for a faculty with ca. 28 members. As implied above, activities emphasize topics such as nanoscience, spectroscopy, theoretical/computational chemistry, catalysis, natural products, organometallic chemistry, and supramolecular chemistry. The research laboratories are excellent, with a continuing program of renovation under way.

Resources, Facilities

The teaching laboratories of general chemistry, organic chemistry and physical chemistry (regular and advanced), and computational chemistry, are generally adequately equipped, with all required instrumentation and infrastructure, as outlined in the self-evaluation report. On the other hand, the advanced analytical teaching lab is in poor shape. It occupies half of a laboratory, with the other half being used for research; this is not recommended, as the space seems insufficient, and because of potential safety issues. Some of the major instruments of the analytical teaching laboratory are out of order and have not been repaired because of budget problems. The Committee recommends that priority be given to correct this situation.

Start up funds for junior faculty are generous, and there is commendable flexibility in how to use them. However, laboratory renovation sometimes takes a long time (up to 1.5 years after a new faculty member's arrival). In addition, the Committee was told that there are no routine funds for equipment and laboratory maintenance.

Regarding mid-career and senior faculty, many research labs and offices are in need of

renovation. This is an issue that is elaborated upon in the General Report.

The library is reasonably maintained and equipped. Most chemistry journals are accessible electronically. However, due to budgetary problems, subscription to several less-utilized journals has been cancelled.

As pointed out in the self-evaluation report, there are structures containing asbestos in the School's laboratories that need to be replaced.

Recommendations:

- **The Advanced Analytical instructional laboratory should be made fully operational, and preferably located in an unshared laboratory space.**
- **Extra effort should be made to have the laboratories and equipment of new faculty recruits ready as early as possible, starting renovation before they begin employment.**
- **Commencement of renovations for new appointments should be undertaken before new faculty members arrive with every effort to complete the renovation within 3 months of arrival.**
- **A special fund for individual research group instrumentation repair is recommended.**
- **Laboratory renovation of mid-career and active senior faculty is needed.**
- **Replace structures and facilities that contain asbestos or ensure that proper containment is in place with a programmed replacement schedule.**

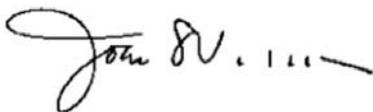
Signed by:



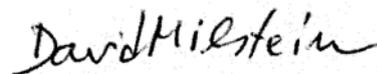
**Prof. Richard Eisenberg
Committee Chair**



Prof. Allen J. Bard



Prof. Joan S. Valentine



Prof. David Milstein



Prof. Tobin J. Marks

Appendices

Appendix 1- Copy of Letter of Appointment

March, 2011

Prof. Rich Eisenberg
 Department of Chemistry
 University of Rochester
 USA

שר החינוך
Minister of Education
 وزير التربية والتعليم

Dear Professor Eisenberg,

The State of Israel undertook an ambitious project when the Israeli Council for Higher Education (CHE) established a quality assessment and assurance system for Israeli higher education. Its stated goals are: to enhance and ensure the quality of academic studies; to provide the public with information regarding the quality of study programs in institutions of higher education throughout Israel; and to ensure the continued integration of the Israeli system of higher education in the international academic arena. Involvement of world-renowned academicians in this process is essential.

This most important initiative reaches out to scientists in the international arena in a national effort to meet the critical challenges that confront the Israeli higher educational system today. The formulation of international evaluation committees represents an opportunity to express our common sense of concern and to assess the current and future status of education in the 21st century and beyond. It also establishes a structure for an ongoing consultative process among scientists around the globe on common academic dilemmas and prospects.

I therefore deeply appreciate your willingness to join us in this crucial endeavor.

It is with great pleasure that I hereby appoint you to serve as the chair of the Council for Higher Education's Committee for the Evaluation of Chemistry Studies.

The composition of the Committee will be as follows: Prof. Rich Eisenberg (Chair), Prof. Allen Bard, Prof. William Jorgensen, Prof. Tobin Marks, Prof. David Milstein and Prof. Joan Valentine.

Ms. Alisa Elon will coordinate the Committee's activities.

In your capacity as the chair of the Evaluation Committee, you will be requested to function in accordance with the enclosed appendix.

I wish you much success in your role as chair of this most important committee.

Sincerely,


 Gideon Sa'ar
 Minister of Education,
 Chairperson, The Council for Higher Education

Enclosures: Appendix to the Appointment Letter of Evaluation Committees

cc: Ms. Michal Neumann, The Quality Assessment Division
 Ms. Alisa Elon, Committee Coordinator

רח' שבטי ישראל 34 ירושלים מיקוד 91911 • טל' 02-5602330 • פקסמיליה 02-5602246
 34 Shivtei Israel St' 91911 Jerusalem. Tel. 02-5602330. Fax 02-5602246
 شارع شبطي يسرائيل 34 . اورشليم القدس 91911 . هاتف 02-5602330 فاكس 02-5602246
 כתובת אתר ממשל זמין: <http://gov.il>
 כתובת אתר המשרד: <http://www.education.gov.il>

Appendix 2- Site Visit Schedule**Tuesday, December 20, 2011:**

Time	Subject	Participants
10:00-10:30	Opening session with the heads of the institution and the senior staff member appointed to deal with quality assessment	1. Prof. Aron Shai, Rector 2. Prof. Dina Kovetz-Prialnik, Vice Rector 3. Prof. David Horn, Head, Academic Quality Assessment
10:30-11:00	Meeting with the heads of the Faculty of Exact Sciences	Prof. Yaron Oz, Dean, Faculty of Exact Sciences
11:00-11:45	Meeting with the heads of the School of Chemistry	Prof. Yoram Cohen, Head, School of Chemistry
11:45-12:30	Meeting with Senior Academic Faculty* + representatives of relevant departmental committees*	1. Prof. Gil Markovich, Chairman, Undergraduate Teaching Committee 2. Prof. Shmuel Carmeli, Chairman, M.Sc. Faculty Committee 3. Prof. Abraham Nizan, Chairman, Graduate Teaching Committee and a member of The Appointment and Promotions Committee 4. Dr. Michael Gozin, Chairman, Undergraduate Admission Committee 5. Prof. Israel Goldberg, Chairman, Scholarship Committee 6. Dr. Micha Fridman
12:30-13:15	Meeting with Ph.D. students *	
13:15-14:15	Lunch (closed working meeting)	
14:15-16:15	Tour of campus (Including classes, labs, library, offices of faculty members, computer labs etc.)	Prof. Yoram Cohen, Head, School of Chemistry

Wednesday, December 21, 2011:

Time	Subject	Participants
09:00-09:30	Meeting with adjunct lecturers*	1. Prof. Eli Flaxer 2. Dr. Diana Golodnitsky 3. Dr. Israel Schek
09:30-10:15	Meeting with B.Sc. students. *	
10:15-11:00	Meeting with M.Sc. students*	
11:00-11:45	Meeting with Junior academic faculty	1. Prof. Fernando Patolsky 2. Dr. Oded Hod 3. Dr. Amir Goldbourt 4. Dr. Yael Roichman 5. Dr. Micha Fridman 6. Dr. Yoav Ebenstein
11:45-13:15	Lunch (closed working meeting in the same room)	
13:15-14:00	Summation meeting with heads of the institution and of the faculty and school.	1. Prof. Aron Shai, Rector 2. Prof. Dina Kovetz-Prialnik, Vice Rector 3. Prof. David Horn, Head, Academic Quality Assessment 4. Prof. Yaron Oz, Dean, Faculty of Exact Sciences 5. Prof. Yoram Cohen, Head, School of Chemistry
14:00-14:30	closed working meeting	