COUNCIL FOR HIGHER EDUCATION

Committee for the Evaluation of Electrical and Communication System
Engineering
Study Programs

The Ariel University
Programs in Electrical and Electronic Engineering
Evaluation Report

November 2016

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Chapter 1: Background

The Council for Higher Education (CHE) decided to evaluate study programs in the field of Electrical and Communication System Engineering during the academic year of 2016.

Following the decision of the CHE, the Minister of Education, who serves ex officio as Chairperson of the CHE, appointed a Committee consisting of:

- *Prof. Alan Oppenheim*- Department of Electrical Engineering and Computer Science – MIT, USA -**Chair of the Committee**
- *Prof. Susan Conry* –Wallace H. Coulter School of Engineering Electrical & Computer Engineering - Clarkson University, USA
- *Prof. Eby G. Friedman,* Electrical and Computer Engineering, Department of Electrical and Computer Engineering- University of Rochester, USA
- *Prof. Roch Guerin*- Department Chair and Professor of Computer Science and Engineering Department- Washington University in St. Louis, USA
- *Prof. Ehud Heyman,* School of Electrical Engineering - Department of Physical Electronics- Tel Aviv University, Israel
- *Prof. Dr.-Ing. Walter Kellermann*- Chair of Multimedia Communications and Signal Processing- University Erlangen-Nuremberg, Germany
- *Dr. Orly Yadid-Pecht*- iCORE/ AITF Chair of Integrated Sensors Intelligent Systems, Department of Electrical and Computer Engineering, University of Calgary - Canada
- *Prof. Mathukumalli Vidyasagar* - Chair in Systems Biology Science Erik Jonsson School of Engineering & Computer Science - The University of Texas at Dallas, USA

Ms. Daniella Sandler and Ms. Inbal Haskell-Gordon served as the Coordinators of the Committee on behalf of the CHE.

Within the framework of its activity, the Committee was requested to:[1]

1. Examine the self-evaluation reports, submitted by the institutions that provide study programs in Electrical and Communication System Engineering, and to conduct on-site visits at those institutions.

2. Submit to the CHE an individual report on each of the evaluated academic units and study programs, including the Committee's findings and recommendations.

3. Submit to the CHE a general report regarding the examined field of study within the Israeli system of higher education including recommendations for standards in the evaluated field of study.

The entire process was conducted in accordance with the CHE's Guidelines for Self-Evaluation (of September 2013)

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

Chapter 2: Committee Procedures

The Committee held its first meeting on January 6, 2016, during which it discussed fundamental issues concerning higher education in Israel, the quality assessment activity, as well as Electrical and Communication System Engineering Study programs in Israel.

In January 2016, the Committee held its visits of evaluation to 12 programs: Tel-Aviv University, the Technion, Bar-Ilan University, Ben-Gurion University, Shamoon College of Engineering, Ruppin Academic Center, Azrieli - College of Engineering Jerusalem, Lev Academic center, Ort Barude College, Holon Institute of Technology, Ariel University and Afeka College of Engineering. During the visits, the Committee met with various stakeholders at the institutions, including management, faculty, staff, and students.

This report deals with the programs of Electrical and Communication System Engineering Administration at the Ariel University. The Committee's visit to the University took place on January 17, 2016.

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

The Committee thanks the management of the Ariel University and the Department Electrical and Communication System Engineering for their self-evaluation report and for their hospitality towards the committee during its visit at the institution.

Chapter 3: Evaluation of Electrical and Electronic Engineering Study Programs at Ariel 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.

1. Executive Summary

Ariel University is the newest university in Israel, having recently transitioned from a college into a university there is therefore a significant need for a detailed, coherent, and serious strategic plan for transitioning Ariel from a college to a university. There is also a need for a clear, long term, and quantifiable vision of what kind of institution Ariel University will become followed by a detailed plan to achieve this vision. Furthermore, there is a need to enhance departmental relations and reputation with local and national industry. More industrial projects are needed for the undergraduate and graduate students, funded projects with industry should be developed by the faculty, and multiple paths need to be developed for job creation for the graduating students and alumni. It would be useful to focus the department and administration to better understand who are your core students, who is your competition, and how best to increase the quality of both the matriculating and graduating students. Finally, and most importantly, recruitment of high quality faculty should be a primary and continual goal.

2. Mission and Goals

Ariel University is the newest university in Israel, having only recently transitioned from a college into a university. The University has almost 14,000 students with about 50% of the students in science and engineering. About 93% of these students originate from west of the green line. About 170 new faculty members have been added since Ariel transitioned from a college to a university in December 2012. The

annual budget is approximately 500M NIS. The University is currently in the process of receiving authorization to graduate PhD students. Five faculty in electrical engineering (and 21 in the entire university) have been approved for advising PhD students. The electrical engineering department has about 800 students including 80 Masters students and ten PhD students.

The mission statement of the institution, as quoted from the self-evaluation document of Ariel University (p. 6), is as follows: "to develop an institute of higher education dedicated to academic excellence, and to open opportunities of Academic Education to underprivileged communities of the Israeli population. Departments relevant to the Israeli economy and society, and to applied research activities related to the development of hi-tech industries were chosen. The development of multi-disciplinary curricular programs, expansion of the senior faculty and their research activities, and admission of graduate students in thesis tracks are designed to meet the following needs: a. Provide academic education in applied disciplines that will contribute to the development of the Israeli economy. b. Develop research infrastructure for the hi-tech industry."

Observations and findings

It is noteworthy that the University believes its focus is on providing opportunities to the under privileged portion of the population within Israel. These efforts include students from the Ethiopian and Arab populations as well as students with FIDF fellowships (25% of the total FIDF fellowships are provided to Ariel). Per our discussions with faculty leaders from Ariel University, Ariel University has the highest number of admitted university students with an Ethiopian background of any university within Israel.

It is praise worthy that the University has been successful in licensing intellectual property (IP) with one good and clear outcome (the company went public for 950M NIS although Ariel had only a small share). Otherwise, the University is losing approximately 2M NIS per year, something to note and watch. The University administration sees its IP policy as a means to balance the budget.

There is some general concern that the greater Israeli population does not sufficiently know or understand what is being accomplished at Ariel University. There is a need to clarify and market what is special about Ariel University besides its unique location.

Recommendations

Essential:

- Develop a more focused mission statement

Advisable:

- Develop and implement a marketing strategy to inform the general Israeli population of the achievements and activities occurring within the University.

3. **Organizational Structure**

Observations and findings

Ariel University is headed by Prof. Yehuda Danon as President and Prof. Michael Zinigrad as Rector. The faculty is headed by the Dean, Prof. Yosef Pinhasi, who is subordinate to the Rector. Under the dean there are five engineering departments including the Department of Electrical and Electronics Engineering (EEE). Prof. Asher Yahalom is the head of the EEE department.

Recommendations

Essential:

- Management needs to choose an individual who has both the responsibility and accountability to drive the college-to-university transition management team. The current Dean of Engineering may be the appropriate person to organize and implement this transition strategy.

4. **Study Programs**

<u>Observations and findings</u>

The undergraduate and masters students expressed concern regarding access to the job market, weak teachers, and the need for more projects with industry.

Most of the students are "practical engineers." The matriculation path for practical engineers needs greater clarity. No psychometric exams are needed for students interested in the practical engineering path and Mechina trained engineering students. The requirements for students interested in the preparatory courses and Mechina are unclear. A student apparently needs to *choose* between the psychometric exam and Mechina.

The dropout rate for a given cohort is around 40% (see Tables 4.1.4 and 4.1.5 on pages 39-40 in the submitted Ariel report). This significant dropout rate may be partially explained by the low levels of admission, which is lower than most of the surveyed colleges. From section 4.1.1 (p. 38), only 10% to 20% of the students have a psychometric score above 600, and 15% to 30% are in the 500 to 600 range. About half of the students are admitted without a psychometric score. From section 4.1.3 (p. 39), only 25% to 30% of the students have a matriculation score above 95 (with bonuses), while for a quarter of the students there is no data.

A master's fellowship lasts for three years and the students are individually mentored if they need additional time.

The admission rate is about 50%.

The student to faculty ratio is about 100 to 20 = 5.

There is concern regarding the reputation of the departmental graduates within Israeli industry other than in the power engineering area.

<u>Recommendations</u>

Essential :

- There is a need to better clarify the matriculation process in terms of the psychometric exams and course requirements.
- The acceptance criteria should be strengthened. To maintain objectivity in the admittance process, all of the students should take the psychometric examination.
- The department needs more industrial projects, particularly other than power electronics (perhaps in cybersecurity). It is recommended that the existing industrial projects should be investigated and critiqued. Perhaps a study of the EEE alumni base should be considered to accelerate this process.

Advisable:

- There is a need to develop a methodology for matriculating non-classical engineering students interested in becoming practical engineers.
- Consider decreasing the number of academic tracks until the faculty size reaches a level that can support the number of tracks.

5. <u>Human Resources / Faculty</u>

<u>Observations and findings</u>

- There are 20 to 21 faculty within the EEE department with a graduating class of about 100 students a year.
- The department operates seven to eight tracks within the EEE curriculum with 21 faculty.
- More than 85% of the faculty commutes from Tel Aviv.
- Some collaboration exists between the EEE department and other departments such as mechatronics and civil engineering.
- Many of the adjunct faculty work at multiple colleges and universities.

Recommendations

Essential:

- Consider decreasing the number of academic tracks until the faculty size reaches a level consistent with the number of tracks Increase the percentage of EEE faculty who are EE trained rather than physics trained. The faculty hiring process appears more opportunistic rather than targeting areas of need in support of the overall disparities within the curriculum.
- Only recruit the highest quality faculty despite near-term needs.

6. **Students**

Observations and findings

- The source of dropouts is primarily due to a particularly tough project or course.
- Many undergraduate students arrive with a weak background and have difficulty with standard mathematics and physics courses.
- The Arab students are often the best students.
- The actual percentage of graduated students who work in their field of study appears to be quite low, and smaller than for other universities within Israel. This issue bears watching. About 20% of the undergraduates work within industry in their field of study in such areas as software validation and programming. Most of the students work in some capacity; often outside their field of study (e.g., as a security guard).
- The general impression of the Ariel graduates to industry is not particularly high in the mainstream electronics and computing areas but there appears to be a better impression of the power electronics graduates.

Recommendations

Essential:

- Develop a methodology to enhance the background of the incoming undergraduate students in the basic sciences and mathematics. This methodology should be placed within an intensive preparatory phase. The acceptance criteria to enter the EEE program should be simultaneously strengthened.

- Strengthen collaboration with industry .

7. <u>Teaching and Learning Outcomes</u>

<u>Observations and findings</u>

- The student faculty ratio is currently quite low, approximately five (5). As the University grows, this ratio will likely grow to levels comparable with other universities within Israel.

- A primary concern within both the administration and faculty is the number of contact hours; more specifically, the seeming unfairness that Ariel faculty are required to support eight (8) contact hours per week while faculty at the other universities within Israel are only required to support six (6) contact hours per week. This disparity is clearly an artefact of the recent transition from a college to a university.

- There appears to be concern regarding overspecialization, as well as a separation of "regular" students from "practical engineering" students. This distinction is worthy of careful consideration.

- In a related manner, it appears that an inordinate number of the faculty within the EEE department are physics trained rather than electrical engineering (EEE) trained. Too great a focus therefore is placed on physical electronics as compared to a general EE curriculum.

- The quality of the teaching seems inconsistent and variable, and to a certain degree the faculty have lost the trust of the students.

- The department considers itself to be the leading department in power

systems within Israel.

- Significant focus on instrumentation exists which is consistent with its physics emphasis.
- There is a focus on power systems and microwave; however, there is not much effort to transition these students to industry.
- No fast track exists for undergraduate students taking an EEE curriculum (unlike in the physics curriculum).
- There is an issue as to whether there are a sufficient number of elective graduate courses.

Recommendations

Essential:

- Increase the percentage of EEE faculty who are EE trained rather than physics trained. The faculty hiring appears more opportunistic rather than targeting areas of need in support of the overall disparities within the curriculum.
- Develop a methodology for quantifying the quality of the teaching process, and provide a motivational mechanism for ensuring consistently high quality teaching.
- Broaden and improve the engineering side of the department in topics such as signal processing, computing, integrated circuits, VLSI, communications, and computer networks .

Advisable:

- More projects with industry are needed, particularly outside the area of power electronics .

Desirable:

- Consider complementing the already existing strong program on physical electronics with signal processing.
- Consider developing a program in RF circuits and systems.

8. **Research**

<u>Observations and findings</u>

- A serious concern is expressed by the EEE faculty that relates to the success rate of the proposals submitted to the Israel Science Foundation (ISF). The faculty believe that their success rate seems disproportionally low despite high scores as graded by reviewers of the submitted proposals. The faculty has expressed concern regarding the fairness of the process. This issue is particularly important to Ariel University since the ISF is the sole source of extramural competitive funding (since funding outside of Israel is not allowed for external political reasons). There are five ISF grants within the University but none of these are in the Faculty of Engineering.

- It seems clear that promotion is primarily based on research output, consistent with a good research university. The issue is whether the faculty is prepared to succeed in this highly competitive environment. Promotion is clearly based on publication records and citation rates, as quantified by metrics such as the h index. It is also clear that not all of the faculty members are active in research, and many faculty do not apply for grants.

- There is a small effort to attract post-doctoral students from outside Israel (two post-docs from India are currently employed within the University). This system of maintaining post-doctoral students is still in its infancy.

- There appears to be a sincere interest in promoting ties with local and national industry. Although desirable, it appears that industrial ties are not currently particularly strong.

- As one of the few research universities in the country, a serious issue is the low level of industrial interactions. Most of the external funding is governmental defense and cybersecurity related.

- There is a general need for more and better graduate students. The PhD students tend to originate from the undergraduate programs within the University. Few PhD students come from other universities and colleges both inside Israel and outside the country.

- There is insufficient funding to support the equipment needs of PhD students.

Essential:

- Both the quantity and quality of the industrial interactions need to be greatly increased and better quantified.
- Graduate students need to be attracted from across the country and the world.

Advisable:

- Faculty should regularly visit the head of the ISF to explain and motivate the importance of their individual research proposals.
- Ariel University administration should encourage faculty who scored "very good" in their ISF proposal reviews to resubmit their proposal by providing internal funding. This support will enable the faculty to continue their research while enhancing the quality of the resubmitted proposal.
- The Vice President of Research at Ariel should inquire into the ISF peer review process, and inform the faculty about the review criteria and grading system.

Desirable

- Perhaps departmental resources could be allocated to provide professional editing in English, and establish an internal peer review process.

9. Infrastructure

Observations and findings

- There seems to be a significant amount of new and useful facilities across the University.

10. Self-Evaluation Process and implementation of previous recommendations

The University has undergone a previous assessment evaluation by a CHE committee. The previous review committee made the following recommendations after its

review in 2007:

- The college must recruit faculty members in the Systems areas in order to ensure the viability of the B.Sc. degree. The college should not be permitted to continue offering the B.Sc. program unless this issue is solved in the near future.

- The committee finds the options of condensing the studies into one and half days a week and of arranging classes so that they all begin at 19:00 to be unacceptable.

- The committee is of the opinion that apart from the fact that these arrangements are not in accordance with the CHE's decision which states that an institution of higher education should provide first degree studies for at least three days a week, such arrangements are inappropriate for an academic program. They compromise the teaching quality and the students' ability to absorb and digest the material.

The University has made an effort to respond to the suggestions of the 2007 CHE committee's recommendations. Specifically, in response to the first recommendation, the department has successfully recruited multiple faculty members in the systems area. However, there still remains an overly strong emphasis in the area of physical electronics due to the large number of physics trained faculty members within the EEE department. In response to the second and third recommendations, as recommended by the 2007 CHE committee, the program for condensing the course work into a two day study program has been cancelled and the evening classes are limited to only masters students.

- Concern was expressed by the CHE evaluation committee that a significant portion of the data (54%) was missing from the current 2016 report distributed by the University.

Observations and findings of self-evaluation report

- It is clear that the University recognizes that it needs to enhance the quality of its students from the undergraduate population to the post-doctoral students. There is also a clear and important need to better impact the Israeli economy by improving the department's industrial relations.

- There is a strong concern (and expressions of unfairness) within the faculty that the faculty teaching load of eight (8) hours per week is greater than at the other Israeli universities (which is six (6) hours a week) despite the same research expectations as for the other universities.

- Much of the self-evaluation report seems unfocused and poorly prepared. Some of the tables are misleading, the mission statement needs greater focus, and the University's geographic location is used as a rationale for all kinds of issues.

- As described in the self-evaluation document, the student completion rate is incomplete and inconsistent.

- The overall self-evaluation process and visit presentations were not particularly focused. This characteristic seems symptomatic of the generally *ad hoc* approach used to manage the University.

Chapter 4: Summary of Recommendations

Essential Recommendations

- There is a significant need for a detailed, coherent, and serious strategic plan for transitioning Ariel from a college to a university. The existing approach seems more ad hoc and opportunistic than designed with a long term strategy

and lacks a self-critical perspective. Management needs to choose an individual who has both the responsibility and accountability to drive the college-to-university transition management team.

- There is a need for a clear, long term, and quantifiable vision (20 years and beyond) of what Ariel University will become followed by a detailed plan to achieve this vision. This vision should not be a wish list but rather a well supported expectation of the University describing its place and impact on the nation (in 2037). Think strategically, long term, and visionary not ad hoc and opportunistically.

- Develop a more focused mission statement

- Management needs to choose an individual who has both the responsibility and accountability to drive the college-to-university transition management team. The current Dean of Engineering may be the appropriate person to organize and implement this transition strategy

- There is a need to better clarify the matriculation process in terms of the psychometric exams and course requirements .

- The acceptance criteria should be strengthened. To maintain objectivity in the admittance process, all of the students should take the psychometric examination .

- The department needs more industrial projects, particularly other than power electronics (perhaps in cybersecurity). It is recommended that the existing industrial projects should be investigated and critiqued. Perhaps a study of the EEE alumni base should be considered to accelerate this process .

- Consider decreasing the number of academic tracks until the faculty size reaches a level consistent with the number of tracks Increase the percentage of EEE faculty who are EE trained rather than physics trained. The faculty hiring process appears more opportunistic rather than targeting areas of need in support of the overall disparities within the curriculum.

- Only recruit the highest quality faculty despite near-term needs

- Develop a methodology to enhance the background of the incoming

undergraduate students in the basic sciences and mathematics. This methodology should be placed within an intensive preparatory phase. The acceptance criteria to enter the EEE program should be simultaneously strengthened.

- Strengthen collaboration with industry
- Increase the percentage of EEE faculty who are EE trained rather than physics trained. The faculty hiring appears more opportunistic rather than targeting areas of need in support of the overall disparities within the curriculum.
- Develop a methodology for quantifying the quality of the teaching process, and provide a motivational mechanism for ensuring consistently high quality teaching
- Broaden and improve the engineering side of the department in topics such as signal processing, computing, integrated circuits, VLSI, communications, and computer networks
- Both the quantity and quality of the industrial interactions need to be greatly increased and better quantified.
- Graduate students need to be attracted from across the country and the world.

Advisable Recommendations

- There is a need to greatly enhance the department's relations and reputation with local and national industry. More industrial projects are needed for the undergraduate and graduate students, funded projects with industry should be developed by the faculty, and multiple paths need to be developed for job creation for the graduating students and alumni. Perhaps hire someone whose sole role is to enhance industrial relationships coupled with an investigative alumni survey. These industrial relationships will need to be quantified in terms of magnitude, impact, and value brought to the University.
- There is a need to improve the success rate in submitted research proposals both to the government (specifically the ISF) and industry.

- Broaden the EEE curriculum beyond instrumentation to signal processing, VLSI circuits and systems, control theory, computer architecture, and other core EE areas.
- Develop and implement a marketing strategy to inform the general Israeli population of the achievements and activities occurring within the University.
- There is a need to develop a methodology for matriculating non-classical engineering students interested in becoming practical engineers .
- Consider decreasing the number of academic tracks until the faculty size reaches a level that can support the number of tracks
- More projects with industry are needed, particularly outside the area of power electronics
- Faculty should regularly visit the head of the ISF to explain and motivate the importance of their individual research proposals.
- Ariel University administration should encourage faculty who scored "very good" in their ISF proposal reviews to resubmit their proposal by providing internal funding. This support will enable the faculty to continue their research while enhancing the quality of the resubmitted proposal.
- The Vice President of Research at Ariel should inquire into the ISF peer review process, and inform the faculty about the review criteria and grading system.
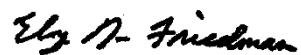
Desirable Recommendations
- It would be useful to focus the department and administration to better understand who are your core students, who is your competition, and how best to increase the quality of both the matriculating and graduating students.
- The administration and department need to better market the quality of their students to the greater Israeli population.

- Consider complementing the already existing strong program on physical electronics with signal processing
- Consider developing a program in RF circuits and systems
- Perhaps departmental resources could be allocated to provide professional editing in English, and establish an internal peer review process.

Signed by:

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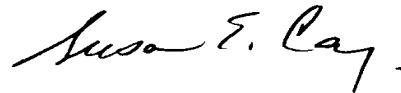Prof. Alan Oppenheim - Chair   Prof. Eby G. Friedman
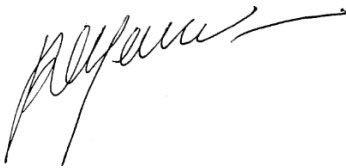
Prof. Ehud Heyman

Dr. Orly Yadid-Pecht

Prof. Mathukumalli Vidyasagar

Prof. Susan Conry

Prof. Roch Guerin

Prof. Dr.-Ing. Walter Kellermann

Appendix 1: Letter of Appointment

COUNCIL FOR HIGHER EDUCATION

December 2015

Prof. Alan Oppenheim
Department of Electrical Engineering and Computer Science
MIT
USA

Dear Professor, Al

The Israeli Council for Higher Education (CHE) strives to ensure the continuing excellence and quality of Israeli higher education through a systematic evaluation process. By engaging upon this mission, the CHE seeks: 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.

As part of this important endeavor we reach out to world renowned academicians to help us meet the challenges that confront the Israeli higher education by accepting our invitation to participate in our international evaluation committees. This process establishes a structure for an ongoing consultative process around the globe on common academic dilemmas and prospects.

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

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 the study programs in **Electrical and Communication System Engineering**. In addition to yourself, the composition of the Committee will be as follows: Prof. Susan Conry, Prof. Roch Guerin, Prof. Ehud Heyman, Prof. Mathukumalli Vidyasagar, Dr. Orly Yadid-Pecht, Prof. Eby Gershon Friedman, Prof. Dr.-Ing Walter Kellermann.

Ms. Daniella Sandler and Ms. Inbal Haskell-Gordon will be the coordinators of the Committee.

Details regarding the operation of the committee and its mandate are provided in the enclosed appendix.

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

Sincerely,

Prof. Hagit Messer-Yaron
Vice Chair,
The Council for Higher Education (CHE)

Enclosures: Appendix to the Appointment Letter of Evaluation Committees

cc: Dr. Varda Ben-Shaul, Deputy Director-General for QA, CHE
        Ms. Daniella Sandler, committee coordinator
        Ms. Inbal Haskell-Gordon, committee coordinator

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Electrical Engineering - **Tentative schedule of site visit**
Ariel University

Sunday 17/1/16

Time	Subject	Participants
9:00-9:45	**Opening session with the heads of the institution and the senior staff member appointed**	Prof. Yehuda Danon, President, Prof. Shmuel Schacham (representing the Rector), Prof. Mally Shechory-Bitton, Vice Rector. Prof. Nitza Davidovich, Head of quality assessment and academic instruction
09:45-10:30	**Meeting with Dean of the faculty of Engineering**	Prof. Yosef Pinhasi
10:30-11:15	**Meeting with the academic & administrative heads of the department of Electrical Engineering**	Prof. Asher Yahalom (Current Department Head) Prof. Shmuel Sternklar (Previous Department Head)
11:15-12:00	**Meeting with senior academic staff***	Prof. Joseph B. Bernstein, Prof. Anatoly Lipsky, Prof. Shmuel Schacham, Prof. Gregory Agranovich, Prof. Er'el Granot, Prof. Moshe Einat, Dr. David Abookasis, Dr. Moshe Averbukh, Dr. Amir Abramovich, Dr. Yuri Lurie, Dr. Monika Pinchas, Dr. Eli Farber, Prof. Alon Kuperman, Prof. Joel Ratsaby, Dr. Arie Reichman, Dr. Neda Miteva, Dr. Igor Dyunin, Dr. Yuri Gorodetski, Dr. Ofir Pele
12:00-12:45	**Meeting with PhD students / Junior academic staff ***	
12:45-13:30	**Lunch** (in the same room)	**Closed-door meeting of the committee (3.0)**
13:30-14:10	**Meeting with adjunct lecturers**	Prof. Michael Slonim, Mr. David Brauda Dr. Dan Weinstok, Mr. Moshe Ben-Ayon Mr. Harry Marks
14:10-15:10	**Meeting with B.Sc. and M.Sc. students**	
15:10-15:40	**Final Project Presentation**	
15:40-16:10	**Meeting with Alumni****	Mr. Moshe Shitrit, Mr. Yoav Haramati, Mr. Nathan Shechter, Mr. Moshe Cohen, Mr. Oz Azrieli, Mr. Yaniv Oren
16:10-17:10	**Tour of campus (classes, library, offices of faculty members, computer labs etc.)**	FEL & Accelerator, Gyrotron & Radiation sources, Electronic components reliability, High voltage & High current, Superconductors, THz,

		Communications, Medical Engineering, Electro-optics, Renewable Energy
17:10-17:30	**committee meeting**	**Closed-door meeting of the committee**
17:30-18:00	**Closing meeting with heads of institution, the Head of the Faculty and the Head of the Department**	Prof. Yehuda Danon, Prof. Shmuel Schacham, Prof. Mally Shechory-Bitton, Nitza Davidovich, Prof. Yosef Pinhasi