



Committee for the Evaluation of  
Industrial Engineering and Management Study Programs

**Ben Gurion University of the Negev**

**The Department  
of  
Industrial Engineering and Management**

**March 2011**

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## **Chapter 1-Background**

The Council for Higher Education (CHE) decided to evaluate study programs in the field of Industrial Engineering and Management (IEM) during the academic year 2009-2010.

Following the decision of the CHE, the Minister of Higher Education Gideon Sa'ar, who serves ex officio as the Chairperson of the CHE, appointed a committee consisting of:

- Prof. Jane Ammons – School of Industrial & Systems Engineering, Georgia Institute of Technology, USA, and President 2009-2010, Institute of Industrial Engineers; Committee Chairperson
- Prof. Mark Daskin – Chair, Department of Industrial & Operations Engineering, University of Michigan, USA
- Prof. Barry Kantowitz – Professor, Department of Industrial & Operations Engineering and Department of Psychology, University of Michigan, USA
- Prof. Haim Mendelson – Professor, Graduate School of Business, Stanford University, USA
- Prof. Shimon Nof, Professor, School of Industrial Engineering, Purdue University, USA

Ms. Michal Kabatznik served as the primary coordinator of the committee on behalf of the Council for Higher Education and Ms. Adi Frish provided key support. Ms. Michal Neumann, Head of the Quality Assessment Unit for the Council for Higher Education, also assisted the committee.

Within the framework of its activity, the committee was requested to:

1. Examine the self-evaluation reports, which were submitted by the institutions that provide study programs in Industrial Engineering and Management and hold on-site visits to those institutions.
2. Present CHE with final reports for the evaluated units and study programs. A separate report for each institution, including the committee's findings and recommendations, together with the response of the institutions to the reports.
3. To submit to the CHE a report regarding its opinion of the examined field of study within the Israeli system of higher education. The committee will submit a separate report to the CHE in this matter.
4. To recommend standards for the evaluated field of study.

The committee's Terms of Reference document is attached in Appendix 1.

The first stage of the quality assessment process consisted of self-evaluation by the institutions. This process was conducted in accordance with CHE Guidelines for Self-Evaluation (October, 2008).

## **Chapter 2-Committee Procedures**

The Committee held its first meeting on March 20, 2010 during which it was charged by Professor Nachum Finger on behalf of the Council for Higher Education. The committee members received the self-evaluation reports in February 2010 and the committee conducted two-day visits to each of the institutions offering study programs in the field under examination in March and May 2010. Dr. Barry Kantowitz was unable to participate in the visits to the Technion and ORT Braude College due to a previous professional commitment. During the visits, the committee met with the relevant officials within the organizational structure of each institution as well as senior and junior academic staff and students.

In accordance with the committee's request, the institution publicized in advance the agenda of the committee's upcoming visit and it invited academic staff members, administrative staff, students and alumni to meet with the committee to determine their opinions of the industrial engineering study program offered at each of the institutions. This report deals with the Industrial Engineering and Management Department at Ben Gurion University of the Negev. The committee's visit took place on May 30-31, 2010. The schedule of the visit, including a listing of participants representing the institution, is attached as Appendix 2.

The evaluation committee thanks the management of the Ben Gurion University of the Negev and the Department of Industrial Engineering and Management for their self-evaluation report and for their hospitality towards the committee during its visit.

This report is based upon information included in the written self-evaluation report as well as additional information included during the site visit. It does not reflect any changes that took place since the site visit. All data cited in this report are from the self-evaluation document unless specified otherwise.

## **Chapter 3 - Evaluation of the Department of Industrial Engineering and Management at Ben Gurion University of the Negev**

### **Executive Summary**

The Department of Industrial Engineering and Management (IEM) at Ben Gurion University (BGU) of the Negev is positioned within the Faculty of Engineering Sciences. Degrees offered by this department include the

- Bachelor of Science in Industrial Engineering and Management (IEM) (with 906 students enrolled in 2008-2009),
- M.Sc. with thesis and without thesis in Industrial Engineering (164 students), and
- Ph.D. in Industrial Engineering (39 students).

The B.Sc. degree has special tracks for excellent students, including specialization in Information Systems and Production Management, and a double degree with Mathematics. The M.Sc. degree has specializations in Industrial Engineering, Information Systems, and Industrial Management. In 2009 there were a total of 1,383 IEM students all degree programs.

The IEM faculty members are organized into seven disciplinary areas: Industrial Engineering, Human Factors, Operations Research, Information Systems, Management & Economics, Statistics, Quality and Reliability, and Intelligent Systems. In 2009 there were 33 faculty members, with 12 of these non-tenured. The student to faculty ratio is approximately 42, an unacceptably high level that hinders the student experience and faculty research productivity.

The IEM program at BGU has graduated a growing cohort of very good industrial engineers who work in a variety of business and industry positions in Israel and abroad in many different fields including manufacturing, high-tech, services, government, consulting, and non-profit. Several have successfully established start-up companies, and some of the graduates are leaders in research at top universities and colleges in Israel and abroad. The IEM program at BGU has an important impact on the country of Israel, its businesses and industries, its productivity, security, and competitiveness.

The evaluation committee was impressed with the excellent IEM students, faculty, staff, facilities, laboratories, curriculum, interdisciplinary culture, collaboration, leadership, reputation, and the location where students focus on their college experience. Things that stood out during the evaluation committee's study of the program include the caliber of the program's self-study and evaluation, the holistic mentality of the program as a system, the contribution of this program to the development of BGU and the faculty of engineering, and the visionary leadership provided by the rector, dean, department head, and numerous IEM faculty leaders.

Among other recommendations, the evaluation committee recommends that the program

- Correct the overload caused by the excessive student to faculty ratio. The current faculty workload is not sustainable.
- Create a strategic plan and resulting action plan that contains an explicit vision for the school, for facilities and space (laboratories, teaching areas, seminars, offices), for the Information Systems thrust, and for curriculum issues (e.g., human factors courses, breath versus depth, required versus elective) and addresses the critically pressing tradeoffs of quantity versus quality.
- Make key process improvements associated with students and alumni, as discussed in more detail in the following report.
- Address important issues associated with untenured faculty, including hiring at the appropriate level (Senior Lecturer versus Lecturer), improve time until tenure and clarify the promotion & tenure process and criteria, and examine the course assignment process that currently creates serious workload issues for untenured faculty.

## **Background**

In 1973, BGU was formally accredited by the Council for Higher Education. BGU has five campuses, and is composed of the Faculty of Engineering Sciences, Faculty of Health Sciences, Faculty of Humanities and Social Sciences, Faculty of Natural Sciences, School of Management, and the Blaustein Institute of Desert Research. The last ten years has seen rapid growth in the number of BGU students, from about 11,000 in 1995-6 to over 17,000 by 2004-5.

The Faculty of Engineering Sciences is organized into twelve departments, Electrical and Computer Engineering, Mechanical Engineering, Chemical Engineering, Industrial Engineering and Management, Materials Engineering, Nuclear Engineering, Biotechnology Engineering, Information Systems Engineering, Biomedical Engineering, Structural Engineering, Software Engineering and five units, Electro Optical Engineering, Environmental Engineering, Management and Safety Engineering, Energy Engineering, and Mechatronical Engineering. IEM is one of the two largest departments, with Electrical Engineering being the other very large department and Mechanical Engineering approaching their sizes. In 2008 the Engineering Science Faculty housed 5,545 students and graduated 1,135 students.

Over the years the IEM faculty have stepped into administrative leadership roles for the Faculty of Engineering Sciences and the top administrative levels of BGU.

## **Mission and Goals**

The evaluation committee was inspired by the vision and mission statements of the Faculty of Engineering at BGU. These were stated as follows.

*“The vision of the Faculty of Engineering Sciences at Ben-Gurion University is both comprehensive and simple: to generate and advance knowledge in technology and to educate students to become leaders in our modern technological society, and thereby to serve the people of the Negev, the State of Israel, and the world community. The Faculty focuses particularly on promoting and advancing the research and development of new technologies and methodologies.*

*The Faculty’s vision is highly collaborative, with many of our researchers are engaged with colleagues, both in Israel and abroad, in interdisciplinary projects. The degree-granting programs in new technologies, such as Biomedical Engineering, Biotechnology, and Nanotechnology and Electro-Optics in particular have generated academic programs, interdisciplinary centers, and research laboratories who work extends beyond traditional departmental boundaries.”*

The Faculty of Engineering has the following goals:

- *“To develop through a synergy of teaching and research, a distinguished cadre of leaders capable of solving the problems of the new century by means of comprehensive and exact scientific inquiry, without losing sight of the implications of technology on human beings*
- *To provide the best – the most rigorous, challenging and inspiring – education possible in order to develop students’ expertise and skills in designing and developing integrated technologies*
- *To maintain state-of-the-art facilities and to support cutting-edge research in a wide range of traditional and emerging technologies*
- *To offer advanced programs that meet the needs of related organizations, industries and the modern technological world.*

*More than any other discipline, engineering is responsible for materially improving the human condition through the creation and dissemination of new technology. Technology, in turn, creates wealth. Our overriding mission, as scientists and citizens, is to use that knowledge and the wealth that it brings for the benefit of humanity.”*

The aims of the Department of Industrial Engineering and Management include:

*“...to engage in cutting-edge applied and theoretical research, to provide the world-class engineering education necessary in a rapidly-changing global economy, and to serve the community, all within the various domains that constitute the IEM field. Part of our mission, as an IEM department, is to emphasize a multidisciplinary approach in both research and teaching, while expanding the application areas that make use of IEM know-how.”*

From an outcome perspective, the mission of the IEM department is defined as follows.

- *The graduates of the B.Sc. and M.Sc. are expected to*
  - *Recognize, understand, formulate and solve a broad range of quality, productivity, and efficiency problems in any type of organizational system and industry.*
  - *Employ analytical technological, computational and experimental techniques for developing generic methods and tools for problem solving.*
  - *Operate effectively individually and in teams, and develop life-long professional learning in a rapidly changing technology and environment.*
- *The research-oriented graduates of the M.Sc. program (with thesis requirement) and the Ph.D. program are expected to*
  - *Ask fundamental questions raised in the IEM field and conduct scientific engineering research studies in an attempt to provide answers.*
  - *Participate in the professional and academic endeavors for advancing the IEM know-how and tools.*
  - *Educate new IEM experts about the role and potential of the IEM field.*



From a process perspective, the mission of the IEM department is defined as follows.

- *The IEM program will equip B.Sc. and M.Sc. students*
  - *with three levels of knowledge and skills including*
    - *Foundation level: Robust engineering and science*
    - *Second level: Advanced analytical skills, and*
    - *Highest level: Integration capabilities*
  - *and personal capabilities:*
    - *academic learning (information collection, memory enhancement, critical reading, creative thinking, structured writing and concise reporting);*
    - *interpersonal communication (listening, speaking, meeting, presenting, negotiating): and*
    - *team work (team formation, leadership, structured problem solving).*
- *The IEM program is to guide the research M.Sc. and Ph.D. students through the following challenges:*
  - *Deepen and widen their fundamental analytical and empirical knowledge and sharpen their creative and integrative capabilities.*
  - *Perform independent research that provides a significant scientific publishable contribution.*
  - *Actively participate and gain experience in academic activities, as composing and defending research proposals, collaborating within a research team, writing papers, criticizing papers, presenting at seminars and conferences, teaching, and guiding students.*

Overall, the evaluation committee finds that the mission and goals of the IEM Department are clear and consistent with the vision and goals of the Faculty of Engineering and the mission of BGU. The expressed IEM mission and goals guide the practical implementation and structure of the program. Within this context, the IEM faculty research thrust is consistent with mission, but suffers by the high teaching and service loads, particularly for the untenured faculty.

Similarly, the education goal is being met. A minor incongruence is that while the mission encompasses on all of the dimensions of the industrial engineering field, the largest focus of the IEM curriculum is on information systems. The evaluation committee encourages the IEM faculty to anticipate that future engineers, in order to be prepared for world-class demands, need to also incorporate the topics of biology and chemistry within their expertise.

The IEM program is doing a good job of graduating students who obtain excellent career opportunities, including international positions. The program also delivers well on the multidisciplinary aspect of the mission, with its clever use of laboratories to foster the multidisciplinary thinking. There are many examples of research projects which demonstrate the expansion of application areas that build on IEM knowledge areas, and BGU may be the leading school in Israel for their advances in IEM applications.

Building on the IEM department's excellent mission and implementation within its educational and research programs, the evaluation committee recommends the development of a strategic plan with a corresponding action plan. The strategic plan should address issues that include:

- Potential introduction of a school that encompasses IEM, safety engineering, and information systems engineering
- The need to address integration and focus of information systems within IEM
- Space planning and the serious need for laboratory space, teaching laboratory space, office space for faculty and graduate teaching assistants, graduate research assistants, seminar rooms
- Curriculum enhancement -- examine breadth versus depth dimensions, required vs elective courses, and possible inclusion of human factors courses.

### **Study Program**

The evaluation committee finds that the study program is satisfactory and is impressed by the effective process used by the faculty via a committee structure for structuring it. This process ensures that the curriculum meets the needs and challenges of profession. The IEM faculty should be encouraged to cultivate more industry exposure in undergraduate courses by bringing in industry speakers, using business case studies, and taking students on plant tours. The IEM faculty should also foster the establishment and support of a student professional society for the students to develop professional networking skills and invite industry speakers to their meetings. Finally, the evaluation committees strongly commends the plans for establishment of an advisory board of alumni and industry employers to ensure continued relevancy of program and provide mechanisms for continuous curriculum improvements.

The evaluation committee encourages the IEM faculty to examine the program again in light of the future needs of engineers to understand biology and chemistry along with fundamental engineering principles. On another aspect of topics coverage, a subset of the committee points out that the program's human factors coverage is based on cutting edge cognitive material integrated well with other areas "above the neck," a good choice in preparing the students for future practice.

The committee notes that the program of study includes a very high proportion of mandatory courses, which on one hand increase the teaching efficiencies but on the other impends flexibility in the curriculum and agility to move in new areas. It also limits the ability of students to focus their education program to their interests. A high proportion of obligatory courses locks in teaching requirements such that some of the faculty members are regularly teaching courses that are outside of their research expertise, even though it is well understood that teaching is enhanced when it is strongly linked to current research activities. When faculty members teach outside their research areas, this benefit is diminished.

The evaluation committee would like to encourage the faculty to consider a one semester senior design experience instead of a two semester course. The one semester structure is easier for students, results in a much better and more timely projects, and greatly reduces teaching demands on faculty. This approach has been taken by other IEM programs in Israel and abroad, and its advantages have been proven in the scholarly literature, e.g.,

Griffin, PM, Griffin, SO, Llewellyn, D. The Impact of Group Size and Project Duration on Capstone Design, *J. Eng. Ed.*, July, 185, 2004.

The evaluation committee would also like to encourage the faculty to consider having more than one or two students on a senior design project. To eliminate the concern that groups with multiple students could empower “free riders,” a process can be established to have students evaluate each other on their contributions and incorporate these evaluations into the course grade. A larger team is more representative of what the students will see in industry, and reinforces team skills taught in earlier courses. Also, having larger teams is a more efficient use of faculty time and allows for projects with larger and deeper scope. Additionally, the faculty could consider implementing the material from the team skills course and project management course into this course.

The evaluation committee would like to encourage the department to expose students to professional networks and opportunities for IE&M students. For example, there are IE&M communities on Facebook, Twitter, and LinkedIn that includes active IE&M student interactions. Additionally, students would enjoy participating in international IE&M student competitions like

- The IIE/Rockwell Student Simulation Competition shown at <http://www.iienet2.org/Details.aspx?id=3382>
- The IIE Student Paper Competition shown at <http://www.iienet2.org/Details.aspx?id=863>
- The Lean Student Paper Competition shown at <http://www.iienet2.org/Details.aspx?id=4042>

There are several issues for which the engineering faculty needs to work with the IEM department faculty to improve the student experience. First, the process for answering questions and providing information for potential students that are being recruited needs to be improved. Also, the delivery of support courses provided by other faculty is deficient. For example, students reported physics courses taught by faculty whom they could not understand due to language deficiencies. The students had to hire external tutors to teach them the material. Support courses seem to be assigned to less than desirable instructors for the IEM students. There is no efficient process to address the students’ complaints about instruction problems outside of the program. Additionally, students would like to have more

courses taught in English, more course materials in English, and more opportunities to develop their vocabulary and communication using technical terms in English,

Currently non-tenured faculty members may serve as the contact person for a yearly class of students, which puts them in a difficult position when the students surface a problem associated with a tenured faculty instructor.

The evaluation committee is enthusiastic about the tracks for special students, including a dual degree with math and a fast track for undergraduates who want to go on to earn a masters degree. It is good to have these options available in the study program to provide opportunities for especially talented students. Similarly, the graduate programs are thoughtful. The tracks are well planned in the masters program. The Ph.D. program is accomplished with an “apprenticeship” approach.

The most serious concern surfaced by the evaluation committee is the excessively high student to faculty ratio of over 40. This is causing numerous problems with the educational program as well as diminishing the research productivity of the faculty. About 50% of the required undergraduate courses are taught by the tenured and tenure-track faculty. This is unacceptable and must be increased.

### **Academic Faculty**

The IEM faculty is strong and engaged, and clearly committed to the program. They work as a team and are distinguished by their multidisciplinary approach. The young faculty seem very promising, with high potential for impact in the highly relevant areas of industrial engineering. Overall, the faculty is research active and well respected. Several are collaborating in cutting-edge and world class multi-disciplinary research projects, e.g., the integration of human factors, robotics, intelligent systems.

Faculty productivity is being decimated by extremely high teaching and service workloads. The classroom teaching assignments are for much larger class sizes at BGU where faculty also face higher research expectations, higher service loads, a relatively larger degree of new course preparation requirements, and the need for administrative support for research grants. The current faculty workload level is infeasible and not sustainable.

Several processes need to be improved for the non-tenured young faculty. First, the faculty members need to begin their academic careers at the senior lecturer rank rather than the lecturer rank so that they can advise Ph.D. students as part of their work to execute grants and write papers. Other top research universities like the Technion have recognized this faculty need. If the faculty candidate has held a postdoctoral position, the standard rank upon hire should be senior lecturer. Also, the faculty development process needs to be examined

to shorten the time period required before faculty can be considered for tenure. Additionally, the untenured faculty need a better understanding of the promotion and tenure process, including more clarity and specificity on expectations and criteria. Finally, the workload levels and assignments for untenured faculty should be examined to make sure that they are not overloaded with service requirements, that early in their appointments their class assignments are reduced, and that multiple preps are minimized.

One of the outstanding aspects of the IEM faculty, and possibly a best practice benchmark for industrial engineering programs worldwide, is that one third of the faculty are women.

### **Students**

The IEM program at BGU recruits good students with diverse abilities who enter a demanding program of study. The rigor of the program challenges the students and prepares them well for careers in business and industry. It is notable that about fifty percent of the undergraduate students are women. Because of the location, students come to BGU to focus on their university studies and the IEM program brings out their best efforts. The dropout rate of approximately 15% for first year students demonstrates that the program is effectively addressing the wider variation of student abilities upon admissions.

Students speak very highly of the faculty, the curriculum, the teaching assistants, and the opportunities provided by the program of study. They are frustrated when they report problems with instructors in service courses (like math and physics) and nothing is done to improve the system

Alumini activity has been limited to date. The evaluation committee strongly encourages the program to follow through with plans to form an alumni advisory board.

### **Organizational Structure**

The technical and administrative staff are excellent, and their roles and activities seem well thought out and effective. Their efforts are authentically dedicated to students and the program.

However, the program needs more administrative support for research enterprise including business processes and laboratory support. There appears to be staff with strong technical skills for the laboratories, but two positions are unfilled and one is part time. One of the most outstanding things about the IEM program outstanding is its laboratories, and to continue be world class they must be supported.

The IEM program has done an excellent job of leveraging its research impact through collaborations with the Mechanical Engineering department.

The administrative and faculty leadership of the program is very effective and valued. The rector and dean have made wise and bold investments to enhance the impact of the IEM program.

### **Research**

The IEM faculty members are research active and well respected. The department is especially distinguished by several cutting-edge and world class innovative projects involving applied multidisciplinary research. These efforts include projects integrating human factors, robotics, intelligent systems. Important emerging areas for this program include water systems, health systems engineering, and transportation systems.

The evaluation committee notes that the IEM young faculty members have high potential for innovation and future significant impact. For all of the faculty members, the teaching and service workload is serious constraint on research productivity.

The evaluation committee commends the recent updates for the laboratories including the special ongoing update of the CIM laboratory. It also praises the rector and dean for providing leadership for strategic investments in new opportunities. Also, the IEM research activities are having a strongly positive impact on education programs.

Faculty research quality and impact can be measured in several ways. For the relatively smaller industrial engineering and management community, the evaluation committee does not consider quantity measures like article citation counts to be especially appropriate, especially because these can create perverse incentives and pressures on faculty. The evaluation committee notes that many faculty members have been actively serving in research journal editorial positions. Some of these journals are considered to be in the top tier, and the emphasis should be on quality of the journals and not the quantity of positions. In a different aspect of research evaluation, it is impressive that the IEM faculty members are competing well on attracting international research grants including those from the European community, the Israel Science Foundation, and several US grants. When evaluating faculty research, the evaluation committee would like to encourage more emphasis on quality than quantity and to measure contribution by impact.

Overall, it is clear to the evaluation committee that the research performed by the IEM faculty has significant value and impact on national priorities.

## **Broader Organizational Structure**

The organization has a holistic mentality of the program as a system, and at all levels there are dedicated administrators, faculty, and staff who continually “go the extra mile.” The leadership of the institution, the college, and the department has demonstrated vision and an understanding of how to maximize institutional effectiveness in the face of limited resources.

The evaluation committee notes the following opportunities to improve the system.

- Dean’s level. The process to interact with and counsel potential incoming students is not working as well as it should.
- Rector’s level. The service courses in math and physics are using instructors who do not have language and other skills to adequately serve the needs of the students. These departments may be assigning less than desirable instructors to the out-of-dept service sections, resulting in a poor learning experience for the IEM students.
- There is not an effective process for the IEM students to complain of a problem and to be sure that the problem is corrected.

## **Infrastructure (both physical and administrative)**

The IEM department is housed in an excellent new building, one that is world class and the envy of many members of the evaluation committee. The program has grown significantly in recent years and now space is a serious limitation. There are not enough faculty offices. Additionally, the offices for the teaching assistants are a problem with up to five teaching assistants colocated per room, all dealing with students in their recitation sections. Also, the state of the art research laboratories are doubled up to provide for educational instruction, but prove to be inadequate given the large class sizes. Last but not least, the program needs seminar rooms.

## **Internal Mechanisms for Quality Assessment**

The evaluation committee was very impressed with the outstanding process of self-evaluation used to involve faculty, staff, and students and develop the self-study report. The table in the self-study documents the excellent efforts of many participants. There is a deep awareness of the self-evaluation process and report by all elements of the department.

The evaluation committee was also impressed by the systemic way that the department engages in self evaluation on a continuing basis. The activities associated with the self evaluation are deep and apply critical industrial engineering tools. It is very noteworthy that continuous improvement seems part of IEM department culture. The evaluation committee would like to commend the implementation and action plan based on self evaluation that is documented of the self-study. It is obvious that the department is already working on making improvements for weaknesses identified by the self-evaluation.

## Summary

The IEM program at BGU is attracting very good students in increasing numbers, and producing graduates who work in a variety of business and industry positions in Israel and abroad. The alumni contribute to many different types of businesses and industry, including manufacturing, high-tech, services, government, consulting, and non-profit. Several have successfully established start-up companies, and some of the graduates are leaders in research at top universities and colleges in Israel and abroad. The IEM program at BGU is having an important impact on the country of Israel, its businesses and industries, its productivity, security, and competitiveness.

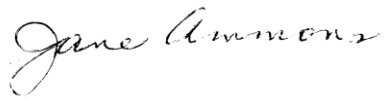
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Among other recommendations, the evaluation committee encourages the program to

- Correct the overload caused by the excessive student to faculty ratio. The research expectations for faculty are relatively higher at BGU, as well as higher service loads, more new course preparations, and faculty administrative responsibilities. The currently faculty workload is not sustainable.
- Create a strategic plan and resulting action plan that contains an explicit vision for the school, for facilities and space (laboratories, teaching areas, seminars, offices), for the Information Systems thrust, and for curriculum issues (e.g., human factors courses, breath versus depth, required versus elective) and addresses the critically pressing tradeoffs of quantity versus quality.
- Make key process improvements associated with students and alumni, as discussed in more detail earlier..
- Address important issues associated with untenured faculty, including hiring at the appropriate level (Senior Lecturer versus Lecturer), improve time until tenure and the promotion & tenure process, and examine the course assignment process that currently creates workload issues for untenured faculty.



Respectfully submitted,



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Jane Ammons



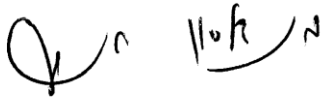
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Mark Daskin



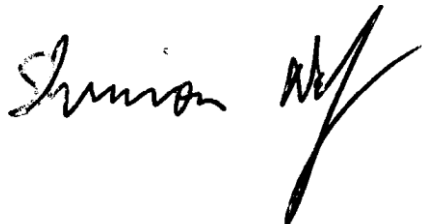
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Barry Kantowitz



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Haim Mendelson



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Shimon Nof

# Appendices

Appendix 1- Copy of Letter of Appointment



November 16<sup>th</sup>, 2009

שר החינוך  
Minister of Education  
وزير التربية والتعليم

Professor Jane Ammons  
School of Industrial Systems and Engineering  
Georgia Institute of Technology  
USA

Dear Professor Ammons,

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 21<sup>st</sup> 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.

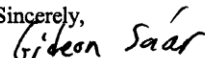
It is with great pleasure that I hereby appoint you to serve as the chair of the Council for Higher Education's Committee for the Evaluation of Industrial Engineering and Management studies.

The composition of the Committee will be as follows: Prof. Jane Ammons - Chair, Prof. Mark Daskin, Prof. Barry Kantowitz, Prof. Haim Mendelson, and Prof. Shimon Nof.  
Ms. Michal Kabatznik 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 a member 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. Riki Mendelzvaig, Secretary of the Council for Higher Education  
Ms. Michal Neumann, Head of the Quality Assessment Unit  
Ms. Michal Kabatznik, Committee Coordinator

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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**

  
**THE DEPARTMENT OF INDUSTRIAL ENGINEERING AND MANAGEMENT**  
**BEN GURION UNIVERSITY OF THE NEGEV**  
**30<sup>th</sup>-31<sup>st</sup> May 2010, Room 150 Building 16**

**Sunday May 30<sup>th</sup>, 2010:**

<b>Time</b>	<b>Subject</b>	<b>Participants</b>
08:15-08:45	Opening session	Rector - Jimmy Weinblatt Rector Elect - Zvi Hacohen Deputy Rector - Yael Edan Dean – Gabi Ben-Dor Dept. Chair - Gadi Rabinowitz
08:45-09:05	Meeting with the Dean of the Faculty of Engineering, the Deputy Dean and Vice Dean	Dean - Gabi Ben-Dor Deputy Dean - Ran Giladi Vice Dean - Moshe Kaspi
09:05-09:35	Meeting with the Heads of the Dept. of Industrial Engineering and Management	Gadi Rabinowitz - Chair Moshe Even - Haim-Vice Chair Haim Shore - Vice Chair
09:35-10:05	Meeting with the administrative and technical staff of the dept.  All together	<b>Administrative staff</b> – Elanite Sarder- Administrative Coordinator Ayelet Mark - Administrative Coordinator (substitute) Iris Avramovich - Teaching Administrator Limor Havadala - Department Secretary Rodica Argintaru-Assistant to Head of faculty Administration-Graduate Programs Luba Rafalsky - Students Affair- Coordinator  <b>Technical staff</b> – Dorit Vazana - Dept. Engineer Albina Bulgaro - Technical Secretary. Muki Cohen – Computer Labs Technician Nissim Abuhazira – Manufacturing labs Computer Systems Administrator & Technica Yossi Zahavi - Manufacturing labs Electronics Technician Noam Peles – Manufacturing labs Development Engineer

10:05-11:00	Meeting with representative of relevant departmental committees* 20 minutes each group	<p><b>Promotion committee:</b> Gadi Rabinowitz, Edna Schechtman, Yael Edan, Joachim Meyer.</p> <p><b>Graduate Teaching committee:</b> Zilla Sinuany Stern (Ph.D.), Joseph Kreimer (M.Sc.), Arieh Gavious (IM), Joachim Meyer, Lior Fink.</p> <p><b>Undergraduate teaching committee:</b> Haim Shor (Head), Moshe Kaspi, Even Haim, Gilad Ravid (1<sup>st</sup> year advisor), Tsipi Heart (3<sup>rd</sup> year advisor).</p> <p><b>Tenured Faculty representatives of the various areas:</b></p> <p><b>Production &amp; Operations Management:</b> Moshe Kaspi, Dvir Shabtay, Ehud Menipaz, Operations Research: Zilla Sinuany Stern, Israel David, Arieh Gavious; <b>Statistics:</b> Edna Schechtman, <b>Information Systems:</b> Gilad Ravid; <b>Intelligent Systems:</b> Yael Edan; <b>Human Factor:</b> David Shinar</p> <p><b>Production Engineering Teaching labs –</b> Yael Edan, Sigal Berman, Raziel Riemer (abroad) - (Intro to ME, CIM, Automation, Robotics, Workshop room).</p> <p><b>Computers Teaching labs:</b> Dorit Vazana (rooms 040, 041, 042).</p> <p><b>Production Management Research labs:</b> Hillel Bar-Gera, Gadi Rabinowitz (Transportation and Advance IE Intel lab).</p>
11:00-11:45	Meeting with Sr. Academic Faculty Members *	
11:45 - 12:15	Tour of facilities (floors -1 and 0)	
12:15-13:00	Lunch	
13:00-14:30	Tour of facilities (floor -1)	<p><b>Intelligent Systems labs:</b> Ofer Levi, Sigal Berman, Vladimir Guntar, Yael Edan, Helman Stern (abroad), Raziel Riemer (abroad), Roie Zivan (on Sabbatical) - (Tele-robotics, Intelligent Systems, Mobile Robots labs).</p> <p><b>Information Systems labs:</b> Nava Pliskin (abroad and available by Skype), Gilad Ravid, Lior Fink, Adir Even, Tsipi Heart, Boaz Lerner – (ESRL and MLBIS labs).</p> <p><b>Human Factors labs:</b> David Shinar, Joachim Meyer, Adi Ronen, Tal Oron Gilad – (Cognitive engineering, Intelligent User Interface, Virtual Environment Simulation, Eye Movements labs, Driving simulator).</p>
14:30-15:00	Closed Door	Working meeting of the committee

**Monday May 31<sup>st</sup>, 2010:**

<b>Time</b>	<b>Subject</b>	<b>Participants (tentative)</b>
09:00-10:00	Meeting with Jr. Academic Faculty Members*	<b>All non tenured faculty:</b> Tal Oron-Gilad, Adi Ronen, Lior Fink, Tsipi Heart, Adir Even, Boaz Lerner, Sigal Berman, Ella Segev, Ofer Levi, Yisrael Parmet, Raziell Riemer (abroad), Roie Zivan (on Sabbatical)
10:00-10:30	Meeting with adjunct lecturers*	Several lecturers from different fields
10:30-11:15	Meeting with B.Sc. students**	2 students from first year 2 students from second year 2 students from third year 2 students from fourth year
11:15-12:00	Meeting with MSc students**	4 students from first year 4 students from second year 4 students from fast track
12:00-12:45	Meeting with PhD students**	Up to 12 PhD students (reflecting levels and areas): 2 Students from 1st year 3 Students from 2 <sup>nd</sup> year 3 Students from 3 <sup>rd</sup> year 2 Students from combined M.Sc.- Ph.D. track
12:45-13:15	Meeting with Alumni**	Up to 10 alumni (reflecting various employments, continued education etc...)
13:15-14:00	Lunch	With a few faculty members for an informal lunch with the committee
14:45-15:45	Presentation of Student Projects	6 undergraduate 4 <sup>th</sup> year students, variety of areas and levels
15:45-16:30	Closed-door	Working meeting of the committee
16:30-17:15	Summation meeting with heads of the institution and of the IE&M Department.	Rector – Jimmy Weinblatt Rector Elect – Zvi Hacoohen Deputy Rector – Yael Edan Dean – Gabi Ben-Dor Dept. Head – Gadi Rabinowitz