

Response to the Recommendations of the CHE's Evaluation Report on Study Programs in the Department of Industrial Engineering at Tel-Aviv University

The IE department is grateful to the Evaluation Committee for a thorough in-depth analysis of the department's current status and activities. The familiarity of the Committee members with all aspects of the study programs, research activities, administration issues and infrastructure has provided a useful feedback for further progress and improvement. The recommendations of the Committee were discussed among the department's faculty members, who expressed a strong willingness to implement all of them. The recommendations of the Committee were also discussed with the Dean and the Rector. Responses to general and specific comments are summarized below.

The potential of the program

We appreciate the Committee's comment on the high quality of the study programs and the research activities of the IE faculty. We are acting towards implementation of the department's academic goals, as summarized in the Self-Evaluation report, within the capacity of the available resources. Providing additional resources will allow the program to increase its activities by diversifying research areas, attracting new high-level research students, and accelerating the development of collaboration with study programs and researchers within the university. The Committee supports providing additional resources and stresses that strategic investment in the IE program will have a high potential rate of return.

The Committee identifies that making use of the existing resources of the faculty alumni club can better realize the potential of the department. We agree that tighter interaction with our alumni can contribute to the study programs and research. Establishing an advisory board for the department will be included in the strategic plan.

Mission statement and strategic plan

We agree with the Committee's recommendation regarding a strong need to develop a focused mission statement and a comprehensive strategic plan, and intend to develop one in the near future. The plan will:

- feature the unique strengths of the TAU IE program,
- specify a distinguished niche of the study program and the research,
- clarify the mission statement to fit within the overall university mission,
- define the main goals to materialize the mission,
- provide the action plan to achieve the goals,
- determine resources and time schedule necessary to implement the action plan,
- establish an ongoing process of self-evaluation and continuous improvement.

The action plan should include the steps for the enlargement of the department. We would like to establish the enlargement process on the following principles:

1. The department grows in
 - the number of faculty and research students,
 - the number of administrative staff,
 - diversity of research areas,
 - cooperation within the university and with other institutions,
 - existing labs and new labs,
 - space for faculty and students.

2. The growth that allows reducing students/faculty ratio will be gradual. The first stage of the enlargement (up to 14 senior faculty, as recommended by the Committee) will be followed by a second stage, in which the faculty grows beyond that number.
3. Each stage of the enlargement should comply with the Faculty of Engineering and Tel Aviv University goals and capacities.

Student to faculty ratio

The report emphasizes an "unacceptably high" student/faculty ratio, and points out its major negative aspects: a small part of required courses taught by the senior faculty, an extensive use of adjunct faculty, large class sizes, and the fact that in many cases students do not receive graded homework. We certainly agree with this comment. We are currently working in collaboration with the Rector and the Dean of Engineering on a plan to enlarge the IE department to 14 senior faculty members, as suggested, in fact, by the Committee. This will decrease the ratio, and even though the number of undergraduate students is not increased, the ratio will remain the highest among the academic units of the Engineering Faculty. The portion of the required courses taught by the senior faculty will rise to 67% from 47% today. The enlargement will open new strategic opportunities, such as:

- strengthening the existing core of research in the areas of Operations Management and Information Systems,
- developing new research directions in the fields of Human Factors Engineering and Service Systems engineering,
- attracting high-level M.Sc. and Ph.D. students willing to carry out the research in these fields.

Collaboration and interdisciplinary activities

The report refers to the high potential of possible vertical collaboration between the university and the academic units, and horizontal collaboration between the academic units that can be expressed in joint faculty appointments, joint study programs and interdisciplinary research. Three major steps that have been done in recent years to improve the collaboration with the other university programs are:

- establishing an interdisciplinary cluster of courses in the B.Sc. program that requires each student to take four courses from other disciplines, mostly humanities,
- opening a joint graduate program that allows the student to obtain an M.Sc. in IE plus an MBA from the Faculty of Management,
- providing the undergraduate Entrepreneurship course, previously opened only to IE, to a wide audience of engineering students and students from other faculties.

We believe more opportunities for collaboration within the university as well as new initiatives strengthening the ties with the IE units in the Technion and the Ben-Gurion University will be identified, when preparing the strategic plan of the department development.

Study programs

The evaluation committee found that all programs and their curriculum requirements are appropriate, and especially praises the integrity and strengths of the undergraduate program. Some specific comments and recommendations regarding possible opportunities to improve the B.Sc. program, such as reducing the number of required courses, enhancing self-learning, and including fundamentals of chemistry and biology, need, to our opinion, very careful and cautious consideration. The departmental curriculum committee that persistently and systematically updates and improves the program will discuss these issues in context of academic and industrial trends, and resources available.

The Committee identifies some weaknesses of the graduate programs. We agree that much more can be done in improving the programs, and specific steps will be addressed in the strategic plan. The proposed enlargement of the department, the improvement of collaboration capabilities and taking advantage of the alumni club can definitely contribute to the quality and better focusing of the graduate programs.

The Committee addresses the issue of a small number of Ph.D. students. The department makes effort to increase the number of Ph.D. students, and indeed this number has grown from 9 to 14 over the last year and a half, since the Self-Evaluation report was written.