



30.9.14

לכבוד
גב' מריה לוינסון-אור
מרכזת הוועדה להערכת איכות הלימודים במדעי המחשב
האגף להערכת איכות
המועצה להשכלה גבוהה

שלום רב,

הנדון: תגובתנו לדוח הוועדה להערכת איכות במדעי המחשב
סימוכין: מכתבך מתאריך 30.4.14

רצ"ב תגובת ביה"ס למדעי המחשב להמלצות הוועדה.

בברכת גמר חתימה טובה,

פרופ' יורם עדן
סגן נשיא לעניינים אקדמיים

**Evaluation of the Computer Science Study Program
at the College of Management Academic Studies**

General Comments

1. We are grateful to the members of the committee for the thorough work and explanations provided in the quality assessment process for the School of Computer Science.
2. In the committee report it was claimed that "the department is over 20 years old..." The School of Computer Science was established 15 years ago, not 20.
3. It was claimed in the report that 'the self-evaluation report was missing graduation dropout rates and updated faculty status". The detailed status of faculty and students was forwarded to the committee through the Council of Higher Education on January 14, 2014, and the detailed dropout data was forwarded on March 2nd, 2014.

Specific Replies to Comments by the Committee

Committee Recommendation	Steps toward implementation (including time table)
A. Short term (~within 1 year)	
The department should put in place a process to reflect the attainment of teaching and learning outcomes in a planned, periodic manner	The process of reflection has started. Already in this coming year of 2014-2015, the expected learning outcomes have been effectively embedded in the curriculum of studies toward the degree, in all tracks and specializations and in all detailed course syllabi. As for the reflection process per se, and the control, a computer program was developed specifically for that purpose so that the feedback and improvement process is effective within every two years. The process is detailed in an appendix A.
B. Intermediate term (~within 2-3 years)	
1) The college must take urgent and decisive action to bring the student-faculty ratio into compliance with the 50 to 1 CHE standard	In accordance with the strategic policy of the college as a whole, currently implemented by the new president, Prof. Asher Tishler, already in 2015, two new tenured faculty members have been hired and within the next three years (2016, 2017, 2018) more new tenured

	<p>faculty members will be hired – all of whom meet the standards required by the CHE standards. On the other hand, the School does not intend to increase the number of students beyond the present figures. Therefore, we expect that by 2018, the School will comply with the required ratio of 1:50.</p>
<p>2) The college must review the academic staff for possible promotions and provide advice, clear procedures, and guidance for their timely advancement</p>	<p>In the framework of the college's general strategic process, which is currently being led by the new president, during 2015, clear criteria will be established for the promotion of faculty members. The relevant faculty members will be informed of these criteria, which will be implemented immediately.</p>
<p>3) The School must institute a professional development program for all academic staff</p>	

Appendix A

Reflection System on the Attainment of Teaching and Learning Outcomes

COMAS School of Computer Science (SCS) welcomes the CHE request to manage the transition towards Learning Outcomes-oriented curricula. SCS sees it both as a privilege and as an opportunity to act as a pioneer in this area, and be the first Israeli academic institution to implement this transition, not only in terms of titles, but also as a structured and comprehensive process.

A review of the literature in this field among the leading universities indicates that the best and mostly recommended way to carry out the process is using a top down approach, starting at the national level, and trickling down through the institution's academic board, academic units, until the last curriculum courses. However, since Learning Outcomes-oriented curricula are still in their formative phase at the national level, and due to the need to begin an immediate implementation with the least damage to the existing program, a decision was made to realize the transition using a BOTTOM-UP approach, to be implemented in the coming academic year.

The procedure developed at our school is a two-year cycle process, during which learning outcomes will be defined for each course, and each outcome will be characterized by both objectives and the appropriate measurement tools to estimate the degree of success at obtaining them. The Learning Outcomes will be tested and monitored over two years, through the feedback of faculty members, students, alumni and industry experts. The feedback will be implemented with changes made to the curriculum every two years, in order to achieve the desired learning outcomes .

The procedure's definition process, data collection, processing and visual feedback production as a tool for managerial decision-making, requires an advanced management system. For this purpose, SCS has developed a software system for the collecting, processing and presenting of cumulative, hierarchical knowledge, for decision-making. The system will manage a flexible hierarchical structure of the curriculum, and allow production of filtered, measurable and comparative indices and reports, reflecting partial or whole views of the curricula. The system will be linked to an advanced feedback mechanism that will enable each student to answer the relevant questionnaires for their courses, during and at the end of the semester, depending on the nature of the learning outcome and its measurement tools (e.g., final exam is only

relevant to the end of term). This dynamic approach will enable the transfer of data and information from bottom-up and vice-versa, when conditions at both national and institutional level are ripe.

Computer science, as well as other fields, is characterized by a multidimensional measuring of Learning Outcomes achievements. In order to cope with illustrating complex, comparative measures, the system will use a sophisticated chart generator, allowing the visualization of complex information in real time, thus allowing each faculty member (depending on the level of permissions), at any given time, to view some or all of the courses under his/her administrative responsibility, and figure out to which extent required learning outcomes are met, both during the planning phase and practically throughout the semester and later.

Figures 1-4 illustrate the structure and some highlights of the management software system user interface:

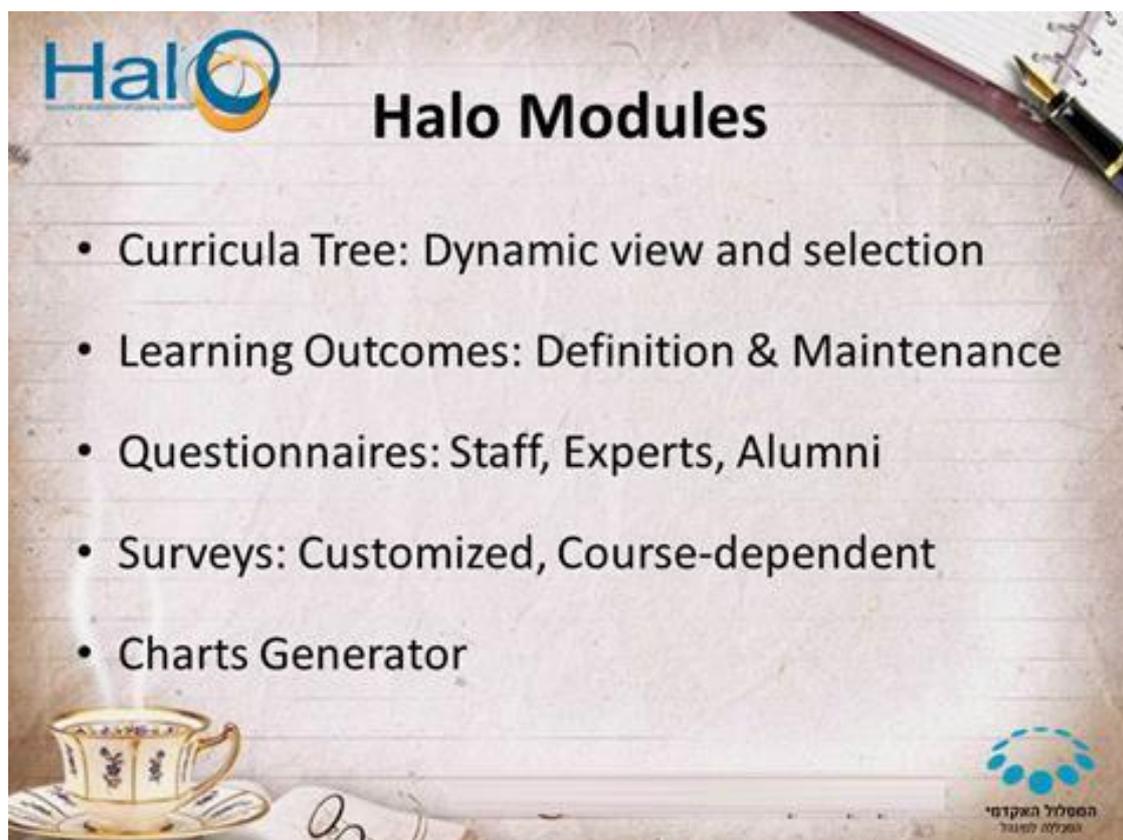


Figure 1. System's structure: modules and functions

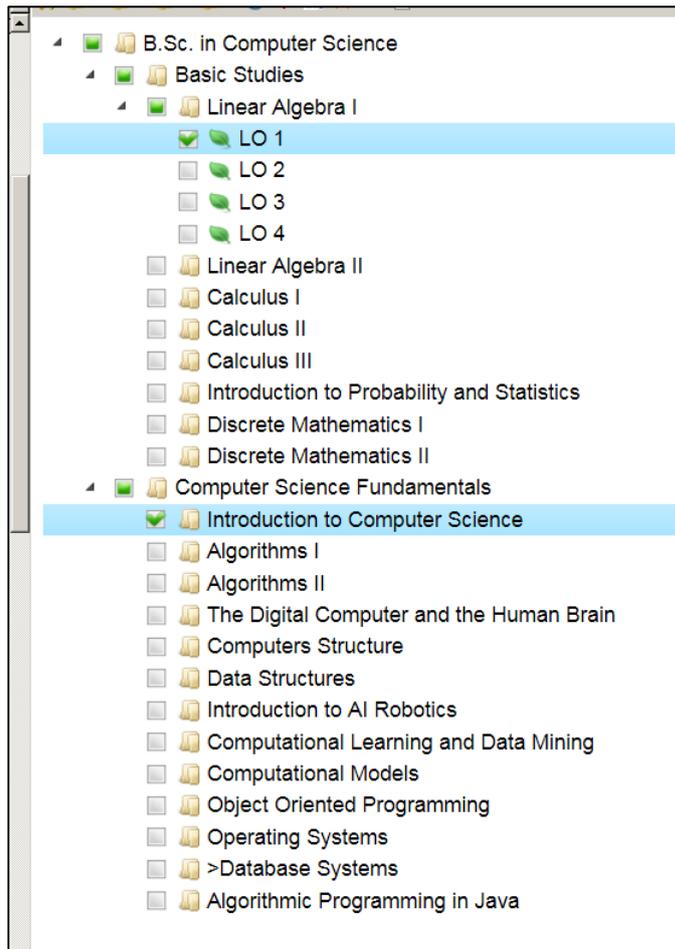


Figure 2. LO Maintenance & Reports: Selection and Search interface

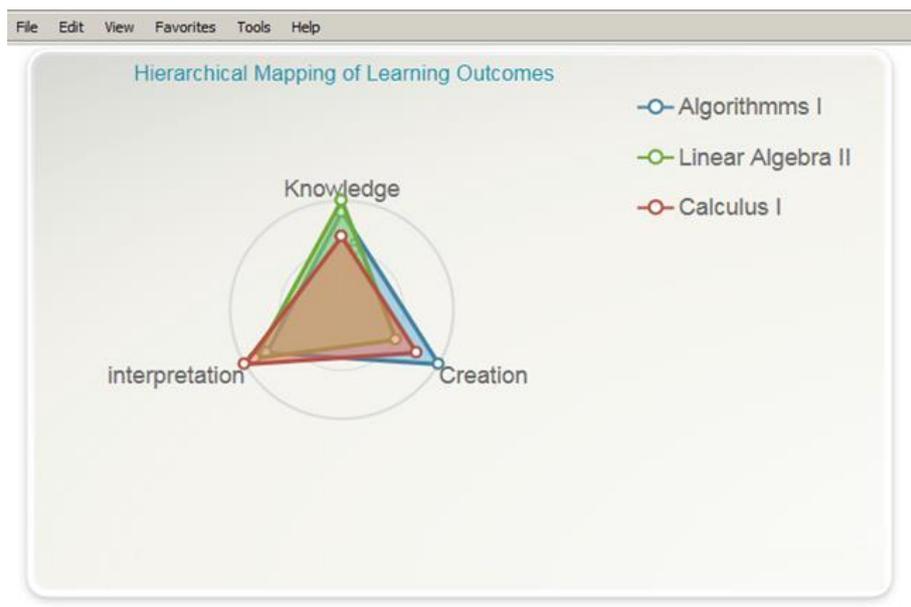


Figure 3. 3D view of courses' mapping – Knowledge, Interpretation and Creation levels of selected courses.

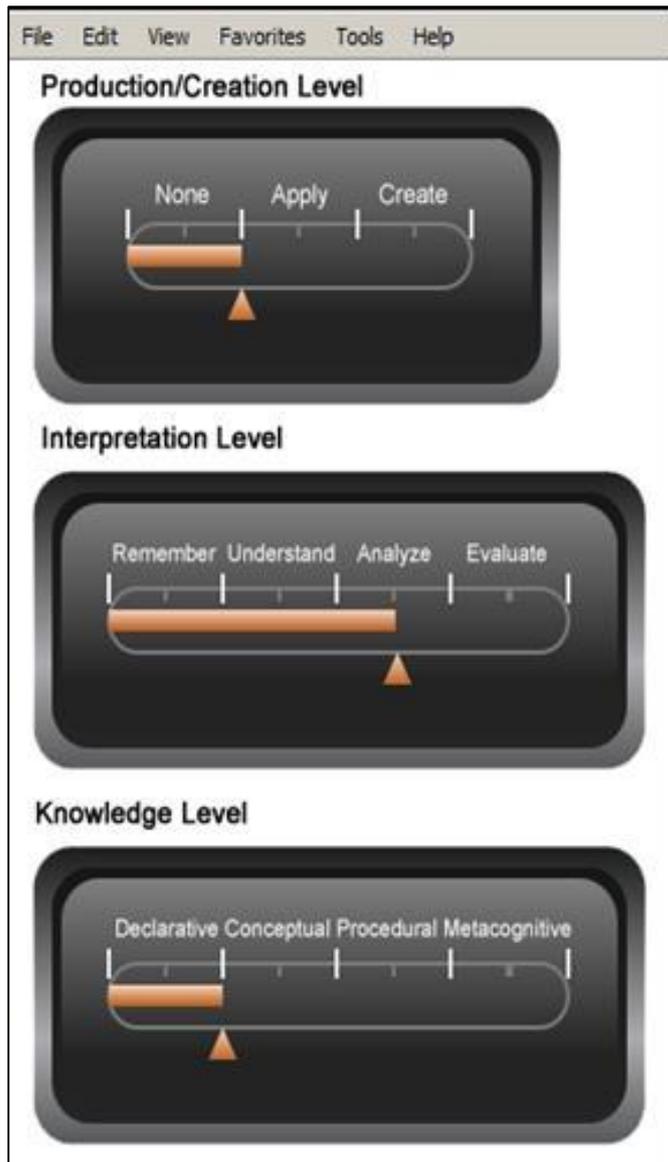


Figure 4. Vivid gauges are used to point out levels of each factor.