In 2011 the Computer Science and Electrical Engineering departments at the Technion announced the inauguration of a new international Technion Computer Engineering (TCE) Center.

The Technion Computer Engineering Center is designed to lead worldwide computer engineering research and education, and to operate as a focal point for academic and industrial collaboration.

Computer Science and Electrical Engineering are two of the Technion’s leading departments. With the TCE Center, they aim to take a national and international leadership role in cutting edge research and education.

The TCE Center provides the foundation and facilities for computer engineering research and education. Its unique model facilitates an unprecedented platform for industrial-academic partnership and creates a novel eco-system beneficial to both.

“Israel can win the battle for survival only by developing expert knowledge in technology”.

Prof. Albert Einstein, (President of the first Technion Society)
**TCE Vision**

- Become a top-rated and highly visible academic research center in applied areas of computer engineering
- Conduct cutting-edge research in computer engineering
- Bridge the industry-academia gap and drive Israeli high-tech industry towards international leadership
- Educate the next generation of world-class leaders in computer engineering

**TCE Mission**

New trends in computer engineering indicate a blurring of boundaries between hardware and software as a shift from the classical Von Neumann model. This change calls for an end-to-end system proficiency. TCE sets the stage for accommodating this shift within its essence. By focusing on the much needed computer engineering research areas, TCE will become a beacon of knowledge in applied computer engineering research and education.

Aiming to lead worldwide computer engineering research and education, and operate as a focal point for academic and industrial collaboration, the TCE Center provides a safe platform to cultivate and foster innovative entrepreneurship and bold cutting-edge research. The next generation of leading researchers may grow out of this alliance.

A joint venture of Technion’s CS and EE departments, TCE strives to bridge the industry-academia gap by encouraging academic members to contribute knowledge to applied research and by hosting part- and full-time industry visitors.
TCE Values

- Recruit best faculty and students, and conduct leading research in computer engineering
- Collaborate on high-risk, challenging research and development
- Enable industry to continue maintaining its edge with limited risk and resources
- Cooperate with experts, researchers and students in target areas
- Create a smooth path from innovation to commercialization
- Host visitors, workshops, tutorials, lectures, conferences and graduate student exchange

Research Areas

Research areas consist of all applied Computer Engineering domains such as Computer Architecture and Systems, Cloud Computing, Communication and Networking, Data Processing and Data Mining, Machine Learning, Computer Graphics, Computer Vision, Cyber Security, Quantum Computing and more.
The Israeli economy is driven by the high-tech sector which is in turn fueled by expertise in Computer Engineering. Recent years have seen dramatic changes in new players’ capabilities (China, India etc.) in precisely this area. Opposite nearly unlimited resources, Israel must keep its competitive edge and rely on quality in expertise and innovation.

The classical models in Computer Science and Electrical Engineering are now shifting – new times bring on new trends and a blurring of boundaries: technologies may now be implemented using HW or SW which have become inseparable. The need for an end-to-end system view is stronger than ever.

Technion graduates comprise the majority of Israeli-educated scientists and engineers, constituting over 70% of the country’s founders and managers of high-tech industries. 80% of Israeli NASDAQ companies are led by Technion graduates and 74% of managers in Israel’s electronic industries hold Technion degrees.

The Israeli high-tech industry is hungry for leading graduates and expert support, in order to stay ahead of the curve in computer engineering cutting-edge work.

TCE welcomes industry researchers and invites them to come work on joint research & collaborate with leading faculty and graduate students in an empowering environment.
Industry Perspective
What's in it for me at TCE?

- I may think of TCE as a research extension of my company:
  - **TCE can host interested employees - spend a day or more every week at TCE**
  - Benefit from Technion faculty members’ extensive knowledge for support in solving internal problems and increase solution quality in a one-stop-shop-like environment.
  - Research current and new areas of interest pertaining to future products and directions

- I can boost the ability of my company to hire senior employees wishing to stay in contact with a research environment

- I can encourage excellent internal employees to work an MSc or PhD to enhance the company’s long-term capabilities and as a retention mechanism

- I may leverage from the special connection with both Computer Science and Electrical Engineering and entice large international companies to open a center of excellence in Israel

- My company can research new technologies via a relatively small investment, no commitment and easy access to the required technology

- I can collaborate on research with complementing industry on new products, using TCE as a safe and neutral meeting zone

- I may watch evolving trends up close and be exposed to new relevant results that come up in academia (through discussions, seminars and papers)

- I can collaborate with academia on raising funding sources, national and international (e.g. EU funds)

- Interact with guests and experts visiting TCE from around the globe
Computer Science

The Department of Computer Science is the second largest academic unit in the Technion, with about 1,500 undergraduate students in eight tracks (about one-sixth of the total number of Technion students) and more than 200 graduate students. It comprises over 50 faculty members of international repute with expertise in a wide variety of fields. It is the largest Computer Science department in Israel and supplies the Israeli high-tech industry with the highest caliber manpower.

As one of the most popular Technion departments it can select the very best students. The department engages in a wide range of research and teaching activities and constitutes a unique meeting point between science and technology. It provides basic computer training to the entire Technion community. A skilled professional staff of engineers, technicians and secretaries support the department’s teaching and research.

*The Academic Ranking of World Universities for 2011 ranked the Technion in the field of computer science 15th in the world. The ranking, performed by the Institute of Higher Education of Shanghai Jiao Tong University, is based on several excellence factors.*

*An international Review Committee has reviewed the Department of Computer Science in May 2008 and has submitted a report to the President of the Technion. The recent review concluded that: “The Technion’s Computer Science Faculty is an excellent department of Computer Science, comparable to a top ten in the United States”.*

www.cs.technion.ac.il
Electrical Engineering

The Department of Electrical Engineering is ranked among the top 10 in the world. The department is the major source of engineers leading the development of advanced Israeli technology in the fields of electronics, computers and communications.

The department acts as a center of excellence in applied and theoretical research, contributing to the advancement of knowledge in electrical and computer engineering in Israel and throughout the world. The department activities constitute an important facet of the technological and scientific infrastructure of the State of Israel. Some 1700 undergraduate students study in the department for a BSc degree in Electrical Engineering / Computer Engineering / Computer and Software Engineering, as well as 450 graduate students pursuing MSc and PhD degrees.

The faculty, the technical staff, and the undergraduate and graduate students are among the best that can be found in a top-ranked institution anywhere in the world.

(International Review Committee, 2009).

The graduates of this Department, whether with a BSc, MSc, or PhD, are as well prepared (if not better prepared) as EE graduates of any top-ranked institution anywhere in the world.

(International Review Committee, 2009).
The Technion Vision

A science and technology research university, among the world’s top ten, dedicated to the creation of knowledge and the development of human capital and leadership, for the advancement of the State of Israel and humanity.

The Technion Mission

In operation since 1924, the Technion is the oldest university in Israel. Since its founding, the institute has educated three generations of men and women who have played a key role in laying the country’s infrastructure and establishing its crucial defense and high-tech industries. In the new millennium, Technion’s role at the forefront of the global network of science and technology has never been more vital.

The university offers degrees in science and engineering, and related fields such as architecture, medicine, industrial management and education in an intellectually invigorating environment. Great emphasis is also placed on its humanities and social science programs, the incorporation of which take on ever-increasing importance in today’s multi-faceted workplace. But Technion’s goals go beyond providing a well-rounded technical education. At the institute, scientific instruction is interwoven with professional ethics, producing leaders sensitive to social and environmental issues.

The dissemination of knowledge doesn’t end in the classroom. The Technion actively publishes its discoveries in journals and popular manuscripts, and aims to spark scientific and technological interest among youth through popular lectures and programs. Technion laboratories are also dedicated to enhancing the country’s economy – they offer novel solutions, research facilities, and world-class expertise.
<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>1912</td>
<td>The 1st cornerstone is laid</td>
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<td>1914</td>
<td>After intense debate Hebrew is chosen over German as the language of instruction</td>
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<td>1923</td>
<td>Albert Einstein visits Technion workshops and initiates the world’s 1st Technion Society</td>
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<td>1924</td>
<td>Classes commence with 17 students in Civil Engineering and Architecture</td>
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<td>1930–40</td>
<td>Absorbing refugees from the Nazi regime, and enduring occupations from invading armies, Technion expands with 11 new labs</td>
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<td>1947</td>
<td>Founding of the Electrical Engineering Department</td>
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<td>1948</td>
<td>With a student body of 680, Technion celebrates Israel’s Declaration of Independence</td>
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<td>1950–60</td>
<td>With rapid growth and intense skills demand, PM David Ben-Gurion allocates a new site in Haifa on Mount Carmel for the Technion City of the future</td>
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<td>1960–70</td>
<td>Outreach programs to the developing world. A Medical School is added</td>
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<tr>
<td>1969</td>
<td>Founding of the Computer Science Department</td>
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<td>1970–80</td>
<td>The trauma of war in 1973 and the hopes for regional peace in the late 70’s affirm the central role of the Technion as a nation builder</td>
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<td>1980–90</td>
<td>From the birth of fiber-optics to the development of optoelectronics, Technion graduates pioneer the start-up nation</td>
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<td>1990–2000</td>
<td>Immigration from the former USSR boosts the student population to 10,500 Technion launches a student-built satellite into space with other universities</td>
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<td>2000</td>
<td>Technion pioneers nanotechnology, advanced energy research, and life science and engineering</td>
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<td>2004</td>
<td>Profs. Avram Hershko and Aaron Ciechanover become the first Israeli scientists to receive the Nobel Prize for their discovery of ubiquitin-mediated protein degradation</td>
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<td>2011</td>
<td>Prof. Dan Shechtman receives the Nobel Prize in Chemistry for his discovery of quasicrystals</td>
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<td>2012</td>
<td>Technion and Cornell University chosen by New York City for engineering campus</td>
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