January 2014

ORT Hermelin Academic College of Engineering and Technology
Internationalization Strategic Plan

Background and Vision

ORT Hermelin Academic College of Engineering and Technology was established in 2009 by the ORT Israel Technological Network. This is the second academic college established by ORT Israel after ORT Braude College in Carmiel. The college campus is located in the northern sector of Netanya's Sapir Business and High-Tec Park in the center of Israel.

ORT Hermelin College was established for the purpose of developing a unique academic center for engineering and technology. The college confers Bachelor of Science (B.Sc.) degrees in the fields of **Medical Engineering**, **Electrical and Electronic Engineering**, and **Mechanical Engineering**.

The academic activity in the college seeks to render engineering studies accessible to a variety of populations in the Israeli society by stressing academic excellence and maximizing individual capabilities. The vision for our educational programs is to provide a rich interdisciplinary learning environment, which focuses on training engineers who will obtain the necessary skills and competencies to become professional engineers, who face successfully the complexity of modern professional challenges, and will contribute to the Israeli local High-Tec, Mechanics, Med-Tec and Electrical industry and society in the future.

We believe that in order to become a leading Engineering & Technological college the process of integrating an international, intercultural, or global dimension will contribute to promote best professional academic practices and research for academic staff and students.

Our Internationalization strategy

Rational

Engineering has classically been defined as the profession that deals with the application of technical, scientific, and mathematical knowledge in order to use natural laws and physical resources to help design and implement materials, structures, machines, devices, systems and processes that safely accomplish a desired objective. As such, engineering is the interface between scientific and mathematical knowledge and human society. The complexity of modern challenges facing engineers also requires that Engineering Education will include foundations in topics such as economics, communications, team skills, and acquaintance with global environments[1]. Companies vary from large-scale, global organizations with international standards to small start-ups relying on all-around players. Thus, a modern engineer has to be prepared to work in a dynamic, global and versatile environment.

[1] OECD (2011), A Tuning-AHELO Conceptual Framework of Expected Desired/Learning Outcomes in Engineering, *OECD Education Working Papers*, No. 60, OECD Publishing.http://dx.doi.org/10.1787/5kghtchn8mbn-en

Therefore, integrating internationalization components into our academic agenda is an opportunity for students, faculty and administration to learn new ways of thinking, to find new ways of communicating ideas, and to understand global systems. Furthermore, in order to prepare our students for successful future employment as engineers in local or multinational companies, we believe that ongoing exposure to internationalization components during their studies will increase their future ability to understand the global High-Tec. market.

We also believe that developing local academic Internationalization at a city level is a unique opportunity for local academic communities to share a vision, knowledge and practical ways of thinking and communicating ideas in the global system.

Strategy

Developing Internationalization Strategy will occur at two organizational levels as follows:

- **(1) Intra-institutional** level (at ORT Hermelin College)
- **(2) Inter-institutional** level- The foundation of a Collaborative Partnership for the establishment of a Municipal IRO.

1. Intra-Institutional level of Internationalization at ORT Hermelin College

1.1. Forming an academic committee to lead Internationalization at home (starting from Oct. 2013).

1.2. **'Internationalization of the curriculum'**[2](2014-2016): Curriculum building and course enhancement to strengthen a culture of global awareness and appreciation for international perspectives in order to best prepare our future alumni to integrate in work places at the local and the global sector (for further details see 'Internationalization of curriculum' appendix # 1).

1.3. **Advancing Research and international ties** (starting 2014): In order to enhance the international capacity of faculty and staff and advance research by connecting institutions and scholars with those who have similar strengths and interests, we will create new partnerships with selected Engineering & Technological H.E institutions in Europe to promote faculty co- research with oversea partners by connecting institutions and scholars in the following interdisciplinary fields:

- Smart Grid - Green Campus and Energy Efficiency
- Medical Engineering - Imaging
- Mechatronics - Robotics and Control

1.4 Establishing international partnerships with professional associations, inviting public lectures, visiting scholars programs, and research collaborations as related to key programs.

2. Inter-institutional level the foundation of a Municipal IRO

Netanya city is one of the most beautiful touristic cities in Israel. Netanya is well known as a touristic resort town with beautiful sea- shore and a vast High-Tec industrial zone with four higher education institutions. These academies covers various fields at undergraduate and graduate levels such as Engineering; Sports Education; Art Therapy; Economics;

[2] Since the college's academic programs are is still under the supervision to the Council of Higher Education (at least until 2016) and any change in the curriculum is forbidden. Therefore, we will integrate internationalization gradually under these restrictions, and form ex-curricular initiatives to promote internationalization that will be fully integrated in the future.

Management & Business**.**
Mobilizing the local community interests for internationalization (Local business community, industry, High-Tec. Start-Ups, municipal officials etc.) is of great interest for all parties.

Therefore, we will try to create a partnership between all academic institutions in Netanya to create a collaborative **Municipal IRO.** The aims are to establish shared goals regarding internationalization enhancement at the city level, while respecting institutional variations and to develop policies, procedures and organizational structures for managing this partnership.
The foundation of a Municipal IRO will bring some benefits to all parties for sustainable internationalization processes. First, it will brand Netanya as an international academic city. Second, it will help to develop shared knowledge endeavor instead of one to one standing alone mode of action, a benefit gained by working together that cannot be accomplished by either institution alone. Finally, it might lead to economic efficiency, while pooling resources of the IRO.

APENDIX 1

ORT Hermelin Academic College of Engineering and Technology
Internationalization of curriculum

1. The rationale

Traditionally, and naturally, the training program of engineers is comprised of technical courses exclusively. The content of such classes is universal and global. Physical principles do not change as you cross borders, and Math does not depend on culture or language. Moreover, learning materials and professional literature are global, and are mostly written in English. However, the daily work of an engineer requires much more than technical knowledge. For example, oral and written communication skills are part of the daily work of most engineers; engineers are regularly required to study new subjects on their own and present them; also they are often involved in aspects such as regulation, quality assessment, or patenting. At the same time, the working environment becomes increasingly versatile. Companies vary from large-scale, global organizations with international standards to small start-ups relying on all-around players. Thus, a modern engineer has to be prepared to work in a dynamic, global, versatile environment, and the training program should be updated accordingly.

2. Specific realization

The program will be accomplished through two main paths. The first is existing courses, where specific adaptations can be made. The second is development of dedicated courses, which will be offered to students at their third and fourth year of studies.

a. <u>English knowledge</u>

Goal: to improve students' ability to communicate in English, both orally and in writing

Means: dedicated Academic English courses including learning materials and assignments in English in some of the basic courses

Timing: all years

b. <u>Learning skills</u>

Goal: to strengthen students' ability to handle new materials on their own

Means: incorporating active learning methods, such as the 'flipped classroom'
Increasing the number of project assignments in various engineering classes

Timing: all years

c. <u>Communication skills</u>

Goal: to improve students' ability to communicate on technical issues with co-workers, customers and suppliers, both orally and in writing

Means: a dedicated course in which students will experience:

- reading and writing of technical documents (reports, specs, standards etc.)
- oral presentations and discussions
- group assignments to cope with technical challenges

Timing: third year

d. Acquaintance with the Global & Entrepreneurial work -market

Goal: to prepare our students for best future employment as engineers in local or multinational companies, emphasizing Entrepreneurship and Tec. Innovation.

Means: Developing a cluster of 2-3 courses, which mostly will be taught in English and will include:

- developing Technological entrepreneurship and Systematic inventive thinking
- exposure to basic principals in management, business development and marketing in competitive global market place
- case analyses of global & local Technological successes
- introduction to key players in the local and global work market
- introduction to engineering related fields such as regulation, patenting etc.
- professional preparation for induction in the work market: exposure to employers, guidance in CV writing, simulations for job interviews.

Timing: fourth year

3. Additional thoughts and ideas

- Cooperating with Ort Braude, and mainly with their teaching and learning center
- Hosting students from other engineering institutions in the dedicated courses
- Expand the communication skills course to include subjects other than engineering, and host students from other, non-engineering, institutions
- In the future, as number of students will increase, consider more specific courses for regulation, patenting, clinical trials, marketing etc.