NEWS FOR A BETTER WORLD

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SHAMOON COLLEGE OF ENGINEERING

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Shamoon College of Engineering Newsletter

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What is new?

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FROM THE PRESIDENT DESK

We are continuing to renew in research and development with emphasis on quality research and teaching and connecting to advanced industries in Israel.

The College maintains research and student exchange collaborations with leading institutions in Israel and worldwide, and thereby enables our students to experience quality learning environments, that enrich their personal and professional lives in many ways.

The College assigns extensive resources to the development and enhancement of teaching means and laboratories and invests in research and development, in the enriching of libraries and in the support of students in various ways, including the awarding of scholarships.

I wish you all a good, healthy and fruitful New Year, one of success in teaching, research and learning.

Sincerely,

Prof. Semyon Levitsky

SCE President

Is the Message the Be All and End All

A first convention in the field of visual communication was held in Be'er Sheva at the initiative of the new Visual Communications Department at SCE • The convention shone a spotlight on the term "Transmedia" and discussed the influence of technology on the message and ways of presentation

"Transmedia" is the new in-subject in the global world of visual communications. It deals with the technological changes and new platforms they have created in the process of forming a variety of visual images and transferring messages. According to the head of the Visual Communication Department at SCE, Nino Biniashvili, the term deals with the ability to tell a story, a tale or brand spread over various mediums, and illustrates how a message or experience is transferred through a story, through the use of various technologies.

The convention in the field of visual communication held at the College, a first of its kind in Be'er Sheva, shone a spotlight on the subject of transmedia through a series of workshops, panels and lectures. The convention was held on 25-26 May 2022, under the initiative of the new Visual Communications Department.

The panels and lectures held on the first day of the convention were open to the general public and included, among others, David Polonsky, the illustrator and animator who created "Anne Frank – The Graphic Diary"; Prof. Terry Shroyer of the Wizo Academic Center for Design and Education in Haifa; Goel Pinto – a journalist and culture critic; Avi Lubin – curator of the Midrasha Gallery and the Field Hospital X project.

The highlight of the second day was a lecture by the artist Zeev Engelmayer ("Shoshka") on "Art and Activism". This lecture was also open to the general public.

Alongside the lectures and panels was an exhibition of works by first year students of the department.

The College Rector, Prof. Jehuda Haddad: "This is a festive day for the College, with the official launching of the Visual Communications Department. It is only the first year, but looking at the works by the students that are on display outside this hall shows their great talent. SCE is proud of its pioneering students that elected to be the first cycle of students in the department and to thereby further advance the field of visual culture in Be'er Sheva and the Negev. The College is committed to do all that it can to provide the students with fertile ground for growth in the field of art. I wish them success in their studies and believe that like us, they will also fall in love with the Negev and will choose to put down their roots here. Together we will attract many, who will see the success and continue the journey".

Prof. Terry Shroyer of the Wizo Academic Center for Design and Education in Haifa: "This is a magical and formative moment of a first cycle taking its first steps in the field of art and visual communications. The teaching of art in cities such as Be'er Sheva and Haifa proves that culture, art and visual communications do not stop in Tel Aviv or Jerusalem. Remember that this is a broad area, that enables experimentation and creates a variety of opportunities after studies. It really all just depends on you, the students".

FROM THE RECTOR DESK

With the 2022-2023 scholastic year beginning, the computer sciences department has opened, where students will begin their studies on both Ashdod and Be'er Sheva campuses. At the same time, we are continuing our vigorous efforts to establish a new campus in the city of Ashdod which will be accompanied by the opening of new and unique study courses on each campus.

We have faced several challenges over recent years related to the worldwide Covid pandemic, the security situation in Israel, the increased cost-of-living, etc. These and other challenges have required that each and everyone of us adapt to a new reality, to develop and grow, to initiate and lead, for ourselves and towards a better future.

I wish all our students, new and veteran, a good and successful year and speeding integration into the fabric of life and learning here at SCE.

With warm regards,

Prof. Jehuda Haddad

Rector

Working on A Better Future for Arid Regions

At the conclusion of a challenging hackathon held by the College with the participation of the DeserTech community, a variety of creative solutions were proposed for storing energy in arid environments.

In the ESN (Energy Storage in the Negev) hackathon event held at the College, together with the DeserTech community, creative solutions for energy storage in desert environments were proposed, which would assist in dealing with the climate crisis and its implications.

Desertech is a joint initiative of the Israel Mirage Fund, the Israeli Institute of Innovation, the Environment Ministry and the Ben Gurion Negev University, that promotes development, adaptation and commercialization of technologies that enable sustainable living in arid climates, while turning Be'er Sheva and the Negev into a global initiative center for these technologies.

The hackathon participants were asked to present new technologies, enhanced existing technologies, network conduction solutions, demand management solutions, etc., whilst relating to technological, financial, administrative, infrastructural and environmental aspects with emphasis on affinity to desert environments.

There were 10 contending groups in the hackathon, comprised of third and fourth year first degree chemical engineering students and first- and second-year green engineering master degree students. The groups were accompanied by mentors, members of the chemical engineering department and representatives of the DeserTech community, who counselled and directed towards applicable proposals.

At the conclusion of a very intensive day the solutions were presented to the judges, who were representatives from DeserTech community industrial companies and academic lecturers, who appraised the products digitally. Appraisals by the student's colleagues from the first- and second-year chemical engineering department were added to the weighted score.

The groups that proposed the three selected solutions won monetary prizes totaling 10,000 shekel, donated by the DeserTech community.

The first place according to the weighted scoring was given to the proposal by students Shani Avitan Basson, Shir Dayan, Mohammed Wotad, Eliraz Stemker, Bar Chen, Yarden Caleb and David Dehan – for storing thermal energy in sand and converting it to electricity. According to the proposal, mirrors would be aimed at the sun rays towards sandy plains which would enhance the radiation. The plain would be enclosed by sheeting that would enable rapid heating of the area without losing heat at nighttime. The hot sand would heat water pipes running underneath and would create steam that would operate a turbine to produce electricity. According to the proposal, the electricity should provide for the needs of a resort in the region.

The second place was awarded to the proposal by students Mor Kadosh, Mor Badani, Dunye Elgaer, Shir Levy, Elad Goldman and Ben Amzaleg. The group proposed using an organic solvent, THF, which enables converting the methane gas created by the anaerobic digestion process of urban waste, to a solid methane hydrate crystals. The process enables storing energy under more moderate conditions than compressed natural gas, with greater transportability and at lower risk. In addition, the costs of establishing and maintaining a plant that would produce this energy product are significantly lower than the existing alternatives on the market.

Group member, Ben Amzaleg, a second-degree student of green engineering, said: "The ability to take a group of strangers, with different ranges of knowhow and experience, and to get them to have a joint short-term discussion, enables achieving new and refreshing products. We were fortunate to have the direction of excellent mentors, who teach us here at the College. The hackathon was an educational experience, that enables and assists in developing creative thinking. For students who will become engineers within the industry, this is a huge advantage. All the participants submitted interesting and fascinating proposals. And there was indeed interest among industrial factors, that offered assistance in continuing creating connections to promote the proposals".

Sivan Cohen Shahari, manager of the DeserTech field at the Israel Mirage Fund and the Israeli Institute of Innovation: "We feel it is extremely important to connect the community with academic bodies, such as SCE, that provide future researchers, engineers and professionals. By assisting events such as the hackathon we want to position the Negev as a global center for technological solutions, that will improve living in desert environments, and create a basis for future collaborations, to establish the solutions in the field".

Prof. Ariella Borg, head of the Chemical Engineering Department: "We are proud of our student's creative thinking, who today showed their strength in team work and defended breakthrough projects for one of the most significant challenges that humanity will be focusing on in the coming years. We congratulate the collaboration with the Desertech community, during which officials in the community were exposed to the products and even proposed connecting to additional factors, so that the submitted proposals will not remain as ideas only. We will continue to maintain collaborations such as these, to provide students with all the tools to enable them to become the agents of change towards a better future for us all".

SOS TO THE CITY CALL CENTER: STUDENTS DEVELOPED A LIFE-SAVING APP

Students at SCE developed an application that enables residents to report to the city call center of dangers and security events in real time and at the press of one button! • The application is already being tested as a pilot of the College with the Rahat Municipality

There is growing sense of insecurity among many residents in Israel. Particularly disturbing is the phenomenon of violence amongst Arab communities. The application developed by Michelle Cleroff and Danit Yeroham, graduates of the Industrial and Management Engineering Department at SCE, will assist city call-centers at local authorities in providing a quick and professional response, and it has already been launched with a pilot taking place in Rahat.

Michelle and Danit, under the mentorship of Dr. Svetlana Daitchman of the Industrial and Management Engineering Department together with Noran Shumaf and Manel Abu Kef, graduates of the Software Engineering Department, and with Dr. Hadas Hasidim, a staff member of the department, developed an application that enables residents to report in real time of dangers and security events in their settlements – easily at the press of a button.

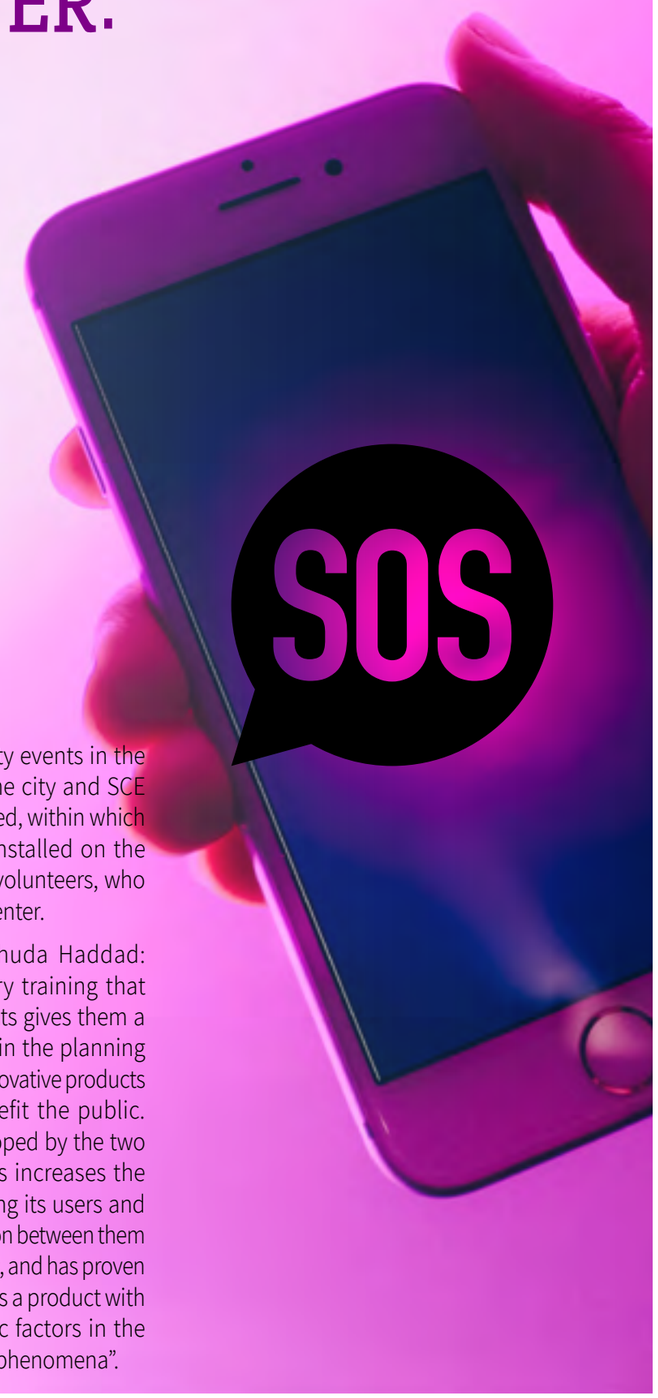
The application, implemented in Android Studio and Flutter environments, with a Node.js server and MongoDB database, enables the city call-center to locate the exact location of the resident at risk, and to direct the appropriate rescue services to provide the necessary assistance. Using cameras, the city call-center can track the resident and contact them immediately after their call to the center, to their mobile phone, or by chat.

The application also provides built-in statistics of various events, for use by the municipality and for monitoring, with the objective of creating a list of priorities and exacting the handling of emergency issues.

The application is suitable for all populations and can be adapted to the requirements of each authority. One of its advantages is providing anonymous reporting, which in some cases increases the chances of cooperation from the residents.

The Rahat Municipality has already taken up the challenge, and for the past half year has been collaborating with the SCE to specify, develop and implement the application to report of dangers and security events in the city. A joint pilot by the city and SCE has recently commenced, within which the application was installed on the telephones of several volunteers, who report to the city call-center.

SCE Rector, Prof. Jehuda Haddad: "The multi-disciplinary training that we provide the students gives them a significant advantage in the planning and development of innovative products and solutions to benefit the public. The application developed by the two department graduates increases the sense of security among its users and improves communication between them and emergency services, and has proven commercial potential as a product with added value for public factors in the eradication of security phenomena".



HOW TO ESTABLISH AND RUN A STRONG AND GROWING DIGITAL COMMUNITY?

A digital community can increase reputation and awareness and create business value for companies and entrepreneurs • A hackathon held on the Ashdod campus provided experience in establishing communities dealing with a variety of issues

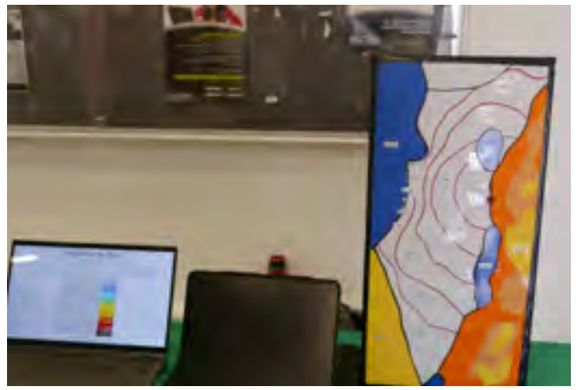
Fourth year students from the Software Engineering and Mechanical Engineering departments participated in the "Digital Communities" hackathon held during the second semester of scholastic year 2021-2022 on the Ashdod campus. The hackathon was held as part of the "Innovative Engineers in Organizations and Companies" course.

Naor Narkiss, an expert in community management and manager of the "The High-Schoolers" community, gave the opening lecture. He reviewed the field of communities in Israel and some of his personal and professional experience, including a "toolbox" for the community manager taking first steps in the field. Narkiss proposed ways of managing a large and growing community, detailed the features of a community manager and spoke about leadership and productivity. The listeners learned how a community can assist in improving reputation, in increasing awareness and in creating business value, as well as receiving methods and tools for creating interactive connections with a supportive community that would assist in empowering the digital presence of the company or organization.

During the hackathon event students gained experience in establishing digital communities dealing with various subjects: 3D engineering, converting to high-tech, sports, etc.

Dr. Neta Kela, head of the Center for Initiative and Innovation at the College: "Just like the physical world, so in the digital world, we as consumers, are looking for a community to which we can belong. Therefore, the subject of digital communities is becoming more and more significant for companies and entrepreneurs. As engineers, understanding the significance of the digital community, in the world in general and particularly in industry, is crucial".

"ENGINEERING EARTHQUAKES": AN EXHIBITION OF DISPLAYS ON THE BE'ER SHEVA CAMPUS



At the Be'er Sheva campus an exhibition was opened to the general public on the important subject of earthquakes and their effect on buildings • The exhibition included displays by students of the "Introduction to Earthquakes" course

The State of Israel is situated in the heart of an active seismic region. Every so often we experience earthquakes of varying origin. Recently, following the collapse of a building in Holon, the discussion of buildings' resilience and readiness for earthquakes, received greater attention, and there is no double that future civil engineers require a deeper understanding of the seismic activity in the region and its effect on the field.

The course "Introduction to Earthquakes" officiated by Dr. Dagan Bekon Mazor, is designed for third year civil engineering students. It deals with the phenomenon of earthquakes and their engineering implications on structures and the population. Later on, additional courses in the field are taught, based on the introductory course, and deal with the design of buildings for earthquakes and the improved resilience of existing structures. The specialization program in structural engineering for earthquakes includes additional unique courses.

At the conclusion of the introductory course the students prepared a learning exhibition titled: "Engineering Earthquakes". They were divided into teams, and each team selected a subject from the list of course subjects, learning it independently, under guidance of the course lecturer. For the exhibition each team prepared a display that illustrated the selected subject: origins of earthquakes in Israel, seismic waves and measuring ground movement, how do warning systems work in real time, and more.

The team of judges, which included academics and members of the Geological Institute, examined the displays. The winning display was a model that illustrated an earthquake warning system in real time, by students Assaf Meimon and Eliav Limud Tora.

The exhibition was open to the general public and was setup on the first floor of the Katzir Building on the Be'er Sheva campus.

According to Dr. Dagan Bekon Mazor, the "Introduction to Earthquakes" course provides students the basics for continued studies in the field, which is especially important in a region that provides many engineering challenges, "The course invited the students to be independently exposed to problem they can expect to face in the future, in studies and in their professional careers", he emphasizes.

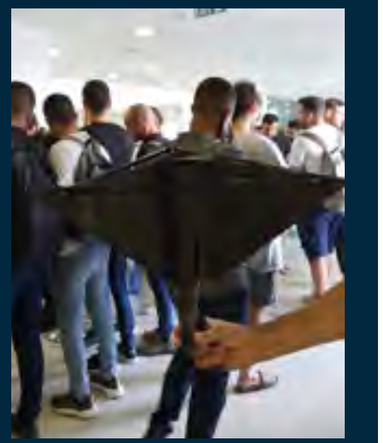
HOW WILL AN EGG SURVIVE A NINE-METERS FALL?

In a fun project happening of the "Structural Dynamics" course interesting challenges were presented, designed to teach about building resilience to harsh and not necessarily expected, challenges.

Scores of students on the Be'er Sheva campus were surprised to see their colleagues' throwing eggs off the third floor of the Legacy building.

The event was part of a projects' presentation day for the "Structural Dynamics" course of the Civil Engineering Department, under the guidance of Dr. Marina Furer and Yedidya Shahar. In the course, designed for third year students, they learn what happens when a structure faces dynamic forces such as winds, earthquakes, etc.

In presentation of the projects, following three weeks of extensive effort including planning, training, accompaniment and performance of two experiments, there were 60 groups of contenders, comprised of the 140 students in the course. The first experiment was the creation of a mini-structure designed to enable an egg survive a fall. The experiment simulates a similar effect of a missile hitting a building: the missile gives a small, fraction of a second hit, and sometimes it is only the shock wave that causes the damage. Fortunately for the students and lecturers, more than half of the structures enabled the egg to fall safely!



The second experiment included the quaking of a model structure using a vibrating table that simulates an earthquake. The students had to build a restraining system that would reduce the movement in the structure during the quake, using technological means. They came up with creative solutions and added various elements to stabilize the structures.

Dr. Marina Furer, the "Structural Dynamics" course lecturer: "This is a challenging course, where the students encounter for the first time a wide variety of variables that the civil engineer has to take into account. In order to enable ideal experiencing of the varying conditions the students were given a laboratory that enabled them to exercise the creation of model structures and put them to various tests. The reality of good civil engineers is the understanding that often the most expected is the unexpected, and often heavily invested models do not withstand the test. Projects' day is a fun and happy happening that allows everyone a learning experience – for those that succeeded in the mission and for those that did not".

ADVANCING RESEARCH TO THE IMPLEMENTATION PHASE

The Business development Unit at the College promotes research and technologies into start-up companies and positions SCE as a central research engine for the establishment of sustainable high-tech industry in the Negev

The Business Development Unit has been active in the College for the past two year, under the leadership of Liran Palik Tevet, with the purpose of locating researches, technologies and projects by researchers and students, and to use them to inspire the establishment of start-up companies or assimilate them in existing companies.

The unit is active in locating collaborations, to expand the eco-system of the entrepreneurial world and to position the Negev region as a relevant and attractive channel for the establishment of pioneering initiatives in Israel. Activity in the south and the connection to the region enables us to establish companies in the region, with the objective of building a sustainable high-tech industry with SCE as the research engine motivating and initiating the process.

Within this capacity the College established SCE Technologies, a commercial company designed to promote business entities and to establish start-up companies based on research done at the College. Over the past year three companies have been established in the fields of cleantech, medicine and motor-tech, and the unit continues to operate, in extensive collaboration with business entities, in order to promote a wide variety of water, food-tech, energy efficiency and medical solutions.

The Companies Established:

Copter Ltd: A study performed by researchers Oshra Sapir and Magal Sapir matured into the establishment of a start-up company funded by the INegev Fund. The company is developing a unique technology that will put an end to the dangers of chlorine in swimming pools, jacuzzi and spa facilities. Chlorine has been used as a disinfectant in water since the beginning of the 20th century. It does contribute to destruction of bacteria and other disease generators, but there are those that claim it also generates diseases, such as asthma and even cancer.

Economotor Innovation Ltd.: The company was established on the basis of a study conducted by a group of researchers from the Electrical and Electronic Engineering Department: Zvi Weiner, Boris Epstein, Dr. Dimitri Beimel and Maxim Redkin. The CaNegev Incubator, which is backed by the Frigo and Ourcrowd companies, invested in establishing the company.

The development of a software that monitors synchronized engines for electrical vehicles. In a world where the transition to using electrical vehicles is increasing, the significance of improved engine performance is critical. The monitoring method, based on software developed at SCE, enables saving on many costs entailed in the production of electrical vehicles and to even significantly improve engine performance. This is a technological breakthrough, which will lead to a significant change in the development of electrical engines.

Sea BD: The group of researchers includes Prof. Mahmoud Halihal from the Ben Gurion University in the Negev, Dr. Oshrat Untman from SCE and additional researchers, which developed a medicine for topical skin treatment of viruses which combines CBD from the cannabis plant with other natural ingredients. The CaNegev Incubator, which is backed by the Frigo and Ourcrowd companies, invested in the company.

The development enables injuring the various virus mechanisms at various stages of their lives, thereby disrupting their development and killing them. It has an advantage over other medicines on the market, to which the viruses have developed immunity.

AN INTERNATIONAL "SUMMER SCHOOL" TO CONTEND WITH THE CLIMATE CRISIS

A collaboration between the Magdeburg University in Germany enabled students from SCE and from a variety of countries around the world to acquire together tools to contend with the global climate crisis

Last summer College students attended a unique summer school – Green Camp, led by the Magdeburg University in Germany. This collaboration is a result of activity by the unit for International Academic Connections at the College, and the second-degree Green Engineering and was led by Prof. Dorit Tavor and Prof. Adi Wolfson from the Chemical Engineering Department.

During the two-week course held in August, students from the College met with students from academic institutions in Canada, Norway, Kirgizstan, Taiwan, and more, via Zoom. The unique learning program focused on ways in which to contend with the ecological-climatic crisis, and enabled students to get to know the subject in-depth and receive tools to contend with the crisis, in order to achieve the sustainable development goals, set by the United Nations (SDGs). Participation in the course was also an opportunity to learn English using various learning methods and digital techniques, in an inter-cultural and trans-disciplinary environment.

The course combined basic theoretical material on the crisis, various test cases and group exercises and projects, while developing various thinking and activity skills and promoting global collaboration. Alongside the students, international experts from various disciplines participated in the program, such as engineering, business management, political science and education. The students participating in the course reported that in addition to the opportunity to hear interesting lectures by lecturers from all over the world on such an important and interesting topic as the ecological-climatic crisis, learning also enabled them to develop their confidence in reading, writing and speaking English, to get to know students from all over the world and to experience team work. Students that fulfilled the requirements received a certificate from the Magdeburg University.

Prof. Ariela Borg, head of the Chemical Engineering Department at SCE, congratulated the participation in the international effort to promote creative solutions to contending with the crisis. According to her, collaboration with the Magdeburg University enabled the students to learn from global experts and to become acquainted with the extensive knowhow accumulated by the UN on the subject. "Of course, further along they will be able to contribute of the extensive experience Israel has in contending with hot climatic conditions", added Prof. Borg.

TEACHER OR ROBOT?

What if your children were to come home from school and tell you that the new class assistant is a human-like robot, based on artificial intelligence? • Well, it is no longer science-fiction! Introducing the research project by Dr. Chen Giladi of the Mechanical Engineering Department at the Ashdod campus

We have all heard endlessly about the shortage in teaching staff. Will the solution come from an unexpected direction, based on approaches from the world of robotics and artificial intelligence? A research project by Dr. Chen Giladi of the Mechanical Engineering Department on the Ashdod campus is actually creating an assistant teacher in human form, that will be a teacher's aide. The research is part of the AI Laboratory at the R&D Department of the Education Ministry, run by Dr. Amir Geffen, and designed to examine the performance of robots in various classes.

The ultimate objective of the project is to find a solution to the problem of a single teacher contending with a class with scores of pupils. The robot aides do not go from pupil to pupil, but can observe the pupils in class and respond to those next to it. Learning is intuitive and similar to the manner in which a human responds to pupils. The robot can even display notebooks of pupils sitting next to it on a table or wall, to provide additional explanations or for group activities. The space surrounding the robots become physital – a combination of the digital world with the physical one.

The display is not only projected from the robot outwards: a human face is projected onto the robot face, which can move and express feelings. The robot therefore, looks like a computerized image that has come out of the screen and received real physital texture.

Another important element of the project is the robot's ability to analyse the pupils' behavior in class and monitor them throughout the day, thereby providing a solution to the teacher's need for monitoring pupils' presence, behavior, etc.

An exposure of the robot to various classes at the Shimon Peres School in Rosh Ha-Ayin has led to some insights by the research team. One is the great importance for the almost completely autonomous operation of the aide in class. In addition, the appraisal that adding voice to the robot would strengthen its presence and position as aide to the teacher, was reinforced. It was also decided that in the updated version the system that projects feedback on the table or notebook would be enhanced, as well

the ability to provide rapid feedback to more pupils.

Apparently, pupils responded to the robots with curiosity and to the point and when asked about its appearance – they were excited at the prospect of a more human looking appearance.

What is left is to see just how autonomous the system can be in the learning environment: to examine how precise projection is on the notebooks and table, and to expand its response to various pupil behaviors and examine its resilience within the school environment and the need for adjustments for continuous operation.

The questions are interesting, perhaps we will meet the answers in classrooms within a few years.

RESPONSES BY HEALTH WORKERS TO EMERGENCIES:

ANALYSIS OF TWITTER DIALOGUES WILL CONTRIBUTE TO THE UNDERSTANDING AND IMPROVEMENT OF COPING ABILITIES

The battle with Covid exposed health workers to increased risk of contracting the virus and to emotional difficulties resulting from the contention • A joint study by Dr. Aviad Elishar from SCE, together with researchers from the Ben Gurion University, used Twitter tweets to understand the experiences and feelings of health workers during the prolonged crisis

Health workers are at the forefront of the battle against Covid-19. Recent reports show that in addition to the increased risk of contracting the virus, health workers may suffer from emotional difficulties following the pandemic. Understanding their experiences and feelings during a prolonged crisis may improve the way communities and nations handle ongoing crises.

Dr. Aviad Elishar of the Computer Sciences Department at the College, together with a team of researchers from the Ben Gurion University in the Negev: Dr. Ortal Slovodan of the Education Department, MA student Ilya Plochtanikov from the Software and Data Systems Engineering Department, Idan Haim Cohen from the Health Sciences Faculty, Dr. Odaya Cohen from the Nursing Department and Dr. Rami Pozis from the Software and Data Systems Engineering Department, analysed 8 million posts ("tweets") published by American and British heath workers, in order to understand the content and dialogue – before and during the Covid pandemic – and the accompanying feelings. Tweets by 25,207 users were analysed using known techniques for natural language processing.

The results of the research show that heath workers in the two countries shared similar experiences concerning health, society and politics related to the pandemic, and these are reflected in the subjects of discussion and expressed feelings. At the same time, these experiences are also associated with local socio-political trends, as well as local social norms concerning the expression of feelings.

In both countries, the major portion of discussions surrounded professional contents (public health, social values, personal achievements and the Covid pandemic). Over 25% of the discussions related to public health and social values, and only 1% focused on loss and sadness. At the same time, the British health workers devoted a substantial part of their discussions to daily affairs, whereas the Americans distinctly relate more to political and food subjects.

Despite the expectation that health workers would share their daily experiences concerning disease and death on social media, it appeared that loss and trauma lacked sharing. The researchers believe that the lack of desire to share negative events on social media reflects the social expectation for professionalism among medical teams.

The similarity between British and American health workers is reflected also in feelings expressed in discussion. They expressed fear when the disease contagion coefficient increased and anger when deaths rose, and the political discussion flooded the lowest positive levels of feelings. At the same time, it appears that British health workers expressed positive feelings more on all subjects compared to their American counterparts.

As shown by previous researchers, health workers in both countries shared a sharp increase in level of fear during the first wave of the Covid pandemic. These levels decreased gradually with time, with an increase in expressions of sadness. The fear was present in both groups as a response to the increase in contagion levels, whereas anger was present in both groups as a response to the increase in deaths.

Despite having found similar formats of emotional response, the intensity of feelings amongst the American health workers was higher than among their British counterparts.

The research results support the potential of using twitter dialogs to monitor and forecast responses by health workers to states of emergency.

Link to the article: /3390.10/org.doi://https ijerph19116895

ADDING FRESH THINKING TO LANDSCAPING

Collaboration between the Yeruham Council and the new SCE School of Architecture offered first-year students a special opportunity to participate in the conceptual planning of the surroundings to the town entrance

A unique collaboration formed between the Yeruham Council and the new SCE School of Architecture, is designed to examine proposals for the conceptual planning of the white hill in Yeruham. Collaboration began with an approach by the Council to the school, with a proposal to participate students in the investigative and planning process of the designated area.

The white hill (Har Lavan), situated at the northern boundary of Yeruham, is a site well known to the region inhabitants. It includes an impressive natural desert system, with indigenous flora and fauna, and constitutes a comprehensive observation point over the town and its surroundings and can be seen from many places inside the town and welcomes those arriving to it. The Yeruham Council decided to begin thinking about a compatible design for the area, as part of the works for establishing an approach road with fencing and signing that was executed by the town residents. The connection to the College was led by head of the urban planning sector in the Council, Tamar Ben Moshe-Roeh.

"The decision to approach the School of Architecture was taken because we wanted to go outside of the box, and to hear the future generation of architects, that is connected to the Negev surroundings, and to refresh our thinking", says Liron Sadeh, Project Manager at the Yeruham Council.

As part of the collaboration the students spent a month researching the Yeruham expanse including the white hill environment. They met with Council members and with residents, toured the area and worked on a variety of proposals, which they presented at a judging event held at the College. The team of judges included the Council Engineer Arch. Rama Mindelin, Project Manager Liron Sadeh, Sculptress Drora Domini and Dr. Yirmi Hofmann – head of the Preservation Department at the Tel Aviv Municipality and a member of the school staff, as head of the historical urban and landscape preservation studies. Pete Odolf, one of the most influential landscape architects in the world, toured the studio accompanied by the College Rector Prof. Jehuda Haddad and also reviewed the proposals.

Student Yarden Cohen stated that it was an exciting opportunity. "We came to a new school not knowing what studies would be like and what opportunities we would have, and already during the second semester, we received an opportunity to propose a conceptual design, in a manner that may withstand the test of reality and enable those arriving in Yeruham to see the hill from afar and the entrance to the town".

Ruth Leonov, administrator of the studio studies at the School of Architecture, said that the approach by the Yeruham Council was received with great joy. "We feel it is very important to reinforce local contexts and connection to the Negev region, with the concept that the challenges the Negev presents to architects are relevant to the field. Attentiveness to the environment in which they live will turn the students into excellent architects along the road".

The judging phase was concluded by Dr. Yirmi Hofmann, who said: "What surprised me the most was the sensitivity of all projects to people, which was hard to foresee at such an early stage in the learning. To me, that in itself is an outstanding success, irrespective of the fate of the proposals along the way".

The Yeruham Council clarified that it is interested in continuing the collaboration and in examining all the materials presented toward researching the area, presenting the exhibition and meeting the Yeruham residents, which will contribute to formulating how the hill surroundings will be handled.

THE PROJECT BORN OUT OF TRAUMA

A final project in the Mechanical Engineering Department proposes a technological solution that will identify an infant drowning in a swimming pool and will even independently activate a rescue

Some start-ups are born out of traumatic events. Such is the project by Alon Shlomo (28) and Geva Benarush (28) from the mechanical Engineering Department at the Ashdod campus.

“Two years ago, I witnessed a drowning at the Zikim beach”, says Alon. “We were asleep on the beach and woke up to the sound of shouting. We saw a person screaming in the dark, from the water. While I called the rescue services my friends managed to get him to shore. Only after some time it became apparent that his wife had been with him. She was found dead by the rescue services after an hour and a half of searching”.

The unnerving event was on Alon’s mind and led him to think about solutions that would save lives. During research conducted with his friend, Geva Benarush, the two realized that they should focus on a specific area, which would enable developing a quick solution. Under the guidance of Dr. Shaike Bilu and Avihai Shorin of the Mechanical Engineering department, they recently performed and presented a breakthrough final project, designed to reduce injury to infants as a result of drowning in private pools.

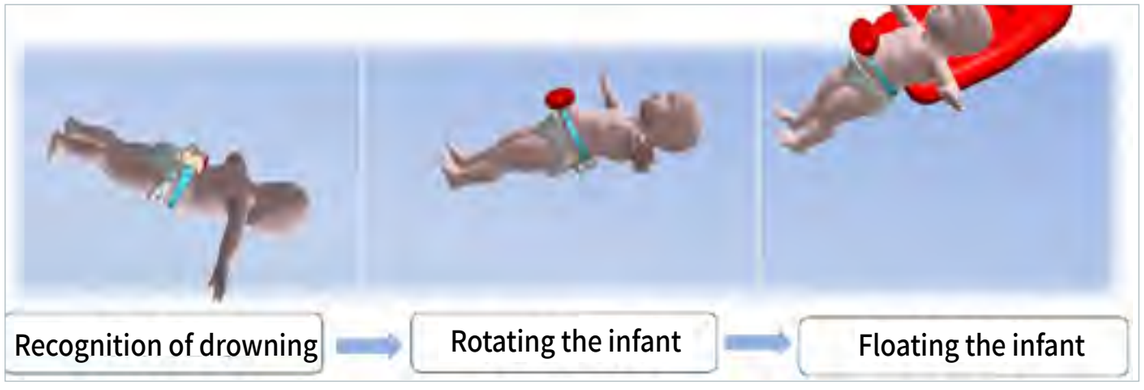
The choice to focus on infants derived from the understanding that they are helpless and cannot call for help. “When you see the statistics of infant drowning victims in Israel and worldwide, you are amazed to discover how these events are a daily occurrence”, says Geva, who this last year became a father. “Apparently 18% of deaths at home of infants in Israel derive from drowning, and over the years there is an increase in these numbers, mainly because there are more and more private pools and an increase in the distracting stimuli”, adds Alon.

The two designed a system that can be dressed on the infant when playing in a pool. It will recognize drowning, will take active action to automatically float the infant and will activate a visual and vocal warning. Alon states that “there are several systems that contend with this subject: systems that warn of life-threatening situations, active systems that perform life saving rescues and systems that prevent unwanted entries to pools. All of them shorten the response time from the moment of identifying the drowning and until removal of the infant from the pool for further treatment, but they are dependent on the human factor”. Their system identifies the danger according to the water pressure at the pool depth and sends signals that inflate a frontal float which rotates the infant to face up. It immediately inflates the back float which floats the infant to the surface. The floats will be made of bright colors to enable immediate notice of the floating infant.

Dr. Shaike Bilu, who accompanied the students during the research and development, says: “The project is unique and innovative in that for the first time it provides an applicable and cheap solution to the increasing phenomenon threatening the lives of infants. The existing solutions are passive and include various floats, which generally obstruct the infant’s movements in the water. The final product will be applicable, safe and easy to use and promoting it is important and commendable”.

According to the two, the choice to study mechanical engineering derived from the desire to find solutions that would change the world. They met during the preparatory course and have been good friends ever since. “One can say that we are currently celebrating five years of friendship”, smiles Alon. “Over the years we have presented many projects together and have enjoyed the dynamic, so that it was obvious we would also do the final project together. Now we can hope to continue to work on the project until it becomes an accessible life saving product”.

Operation



THE ENGINEERS OF THE FUTURE ARE ALREADY HERE: HUNDREDS OF GRADUATES PARTICIPATED IN THE GRADUATION CEREMONIES ON BOTH CAMPUSES

A year after leaving for the work market the excited graduates assembled for the graduation ceremonies and shared experiences and hugs • The College Staff was also excited to see the graduates, who had already commenced their professional journeys

Hundreds of SCE graduates participated in the graduation ceremonies held on the College campuses in Ashdod and Be'er Sheva. Each year the College trains around 15% of Israel's engineers, and the number of students increases annually.

A year after leaving for the work market, graduates met their fellow students, took pictures and filled in details. The degrees were granted to graduates of all the departments: civil engineering, industrial and management engineering, mechanical engineering, electrical and electronic engineering, software engineering, chemical engineering and green engineering.

The College Rector, Prof. Jehuda Haddad, congratulated the graduates and said: "You are leaving with a cargo of knowledge and values that will make you excellent engineers, that will each in their own way contribute to the development of a healthier, stronger, more humane and technological society. You can expect to be faced with complex challenges, and I am certain you will contend with them excellently. Do not suffice with dreaming small, dream big; because you, each and every one of you, can! The SCE College is the realization of a dream that we dreamed, believing that higher education should enable each and every one to choose a unique road to excellence".

The College President, Prof. Semion Levitzky, added: "You have reached this standing after years of effort in studies and continuous work, and you deserve to celebrate. You have all faced complex challenges, and I am certain that you are proud of your huge achievements in completing your studies and receiving your degree".

The ceremony on the Be'er Sheva campus was attended by Be'er Sheva Mayor Rubik Danilovitz, who encouraged the graduates to dream and lead: "Dear graduates, you have been given the most important task of creating our future, in all fields of life. To improve the world and bring solace to our society to find solutions for disease, and to bring about healthier and better lives for people".

The emotional ceremonies were attended by the College CEO Zohar Wolpert Cohen, head of the Academic Administration, Dr. Avshalom Danoch, members of the Administrative Committee, department heads, other dignitaries and family members of the graduates – who came to participate and enjoy.

"INITIATIVE, OPENNESS AND RESPONSIBILITY ARE IMPORTANT FEATURES FOR EVERY ENGINEER"

Gadi Maman, a first-degree graduate in electrical and electronic engineering from SCE is currently the chief electrical engineer at the ICL Bromide Composites Factory * 11 years after completing his studies, he still praises the College President of today and tells us where we can find the next generation of the Maman family

Almost every day we hear of the crises and challenges facing us, dwellers of planet earth. Today's diligent engineers are working vigorously to find solutions that will make tomorrow better. One of them is Gadi Maman, a graduate of first-degree studies in electrical and electronic engineering at the College.

Gadi, who currently serves as the chief electrical engineer for the ICL Bromide Composites Factory, shares his activities at his place of work and the significant project he is working on: "Our professional activity touches on many areas, with emphasis on reducing green house gas emissions: energy saving, green building, establishing PV fields for renewable energy, and more. One of the most interesting and challenging subjects for me is the field of energy storage. I am partner to a unique ICL venture in this field and sincerely hope that the project will succeed, and that we will be able to tell of an innovative development, first of its kind in the world".

Of the path that led him to becoming and electrical and electronic engineer he tells: "I was an electrical practical engineer and decided that I wanted to advance to different and more challenging positions. I began complementary studies in the course for power systems in the electrical engineering department at SCE". According to him, the title of "engineer" does open doors and is important, but it is worthwhile investing in additional subjects as well. "The specific knowledge and professional experience that you bring, together with initiative, openness and responsibility, are no less important", he says.

The learning period was not easy for him. "I studied while working on a demanding and challenging job, with a family of three small children. It is not easy, but with determination and the support of the family – everything is possible". Gadi states that the image of the College President, Prof. Semion Levitsky, accompanies him to this day: "He was my lecturer on infinitesimal arithmetic at the time. He knew how to teach the material simply, and always with a smile and humour. I am certain that the students to this day profit greatly from his presence at the College and his present position".

11 years after completing his studies, Gadi's children have grown up since then and are walking in his footsteps and will become engineers themselves. The second generation is currently manning the College halls: "My eldest daughter, Sapir, is completing her first-degree studies this year in the Industrial and Management Engineering department and my son Idan is a third-year student in the Mechanical Engineering Department".

Academic Staff

Dr. Alissa Vozlinsky

Member of the academic staff in the Industrial and management Engineering Department | Ashdod campus

I immigrated to Israel with my parents when I was 11 years old. We arrived in Ashdod.

I studied industrial management for a bachelor degree at the Sapir Academic College, in the Data Systems Course, and completed the degree summa cum laude. I continued immediately to study for a master degree in business management at the Ben Gurion University, in the financing course. I won a Zvulun Hammer Scholarship for Excellence in Academic Studies and Personal Achievements.

Even before completing my master degree studies, I continued on to a direct doctorate course and won the Negev-Amit Zin Scholarship for outstanding doctorate students. My research was in the field of behavioral economy, also known as psychology in economics. During my second- and third-degree studies I conducted research and published articles.

During my first-degree studies I often found myself standing in front of the blackboard during the breaks and explaining the material we had just learned to my colleagues. From the second semester of my first year, I assisted students in their studies as part of the PERAH tutorship program and as part of assistance to the student's deanship. I realized that I love teaching and that for me it is not only to teach – it is making knowledge accessible, causing students to understand the various subjects and to love them.

I began working at the College in 2012 as a tutor in the Industrial and Management Engineering Department in the Ashdod campus, and from 2020 – became administrator for the final projects of the department. I am continuing my research in the field of psychology in management and economy.

I think that it is very important to give students personal and fair attention, while adhering to a high academic standard and relevance to the work market. The College believes in all of these, and I am proud to be part of the staff here.

Nowadays I am a resident of Ashdod, mother to two lovely daughters. I love art and have been painting all my life, since a very young age.

I wish everyone lots of health and success in studies and personally.

Administrative Staff

Omri Eshed

In charge of maintenance in the Operations Department, Be'er Sheva campus

Married to Shoshi and father of two sons: Liron and Orel.

I was born in Rishon Lezion, and from a young age was attracted to the field of electricity. The journey to this field began at the Air-Force School at Tel Nof, and from there I continued to practical engineering studies in electricity at the Ort College in Rehovot.

In the army I served as an electrician for ground equipment in the Air Force, where I gained something more and very significant, when I met my wife. That is how I ended up living in Be'er Sheva.

My first steps in Be'er Sheva were as an independent electrician. I constructed electricity infrastructures from scratch and performed installation and services in the field of electricity and air conditioning.

Following a need and desire for a meaningful and stable work place, I found a position at the College in 2015. I began as a maintenance worker in the Operations Department of the Be'er Sheva campus, and after two years was promoted to manager of maintenance, a position that I find challenging and interesting every day. The position requires varied fields of occupation, handling electromechanical systems and maintaining the electricity systems at the College, and these provide me with satisfaction and interest.

As part of my integration into the College, I combine my love for football by participating as a player in the SCE futsal team, which is represented in the work place league. I enjoy it and am proud to combine what I love with representing the College on a team that wins important titles.

In addition to the satisfaction I have a work, I am accompanied by a wonderful sense each morning of coming to a work place that is like home; my colleagues are close friends, warm and amazing. It makes everything perfect.

Omri Eshed was selected outstanding administrative worker for the scholastic year of 2016-2017.

LEARNING FROM THE SEVEN SPECIES*

A package inspired by the pomegranate, a flexible arm and silicon band to connect pipes inspired by the vine – are three of the interesting projects developed in the course for Methodological Thinking in the Mechanical Engineering Department, under the combined guidance of a biologist and product designer.

Under the combined instruction of biologist Dr. Ifat Yair and product designer Dr. Alon Weiss, a course in methodological thinking was held in the Mechanical Engineering Department during the first semester of scholastic year 2021-2022. The course was project oriented and included guidance in biological investigation (search and abstraction), locating and reading articles, idea development and conceptual implementation based on the structure and physical principals of the biological system.

The course was designed to teach a methodological way of creative thinking called Bio-inspired thinking, by implementing a project using the bottom-up approach.

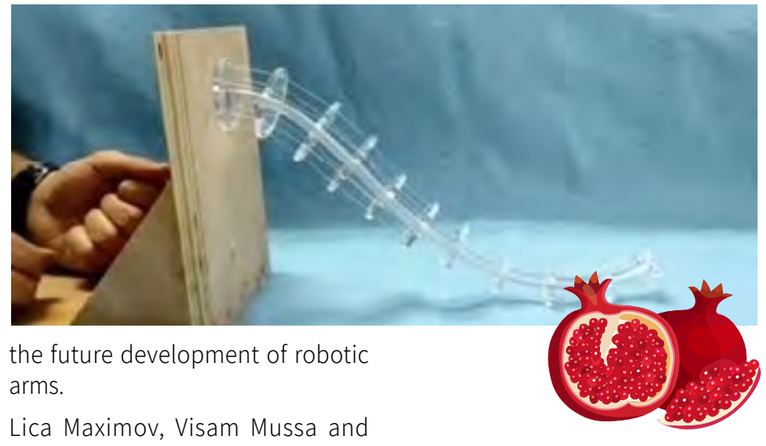
The students analyzed systems in nature inspired by a mechanism/feature of one of the seven species and examined the principals of design and strategies in nature, which can be studied for implementing solutions to a variety of cases.

The student Gal Cohen presented an innovative package inspired by the pomegranate: a modular pop-up box for businesses wishing to package goods/objects for transportation, especially for small quantities or irregular shaped products.

Two additional products developed were inspired by vine tendrils. Dvir Dahan, Shoham Cohen and Issac Leviashvili submitted a conceptual model: they focused on creating a model of a flexible arm, made from light weight materials, that illustrates the future development of robotic arms.

Modular foaming case

Final packaging in different sizes



Lica Maximov, Visam Mussa and Sharon Dotan presented a concept for a silicon band to repair/connect irrigation pipes. The strengths of the concept are in the ability to connect varying sizes of pipes, and to even mend damaged pipes by sealing using the band only.

THE LIBRARY RECEIVES A NEW COLLECTION IN THE FIELD OF DESIGN

New on the shelves: Following the establishment of the Visual Communications and Architecture departments, the College library is also being renewed with books and journals in the fields of art, architecture and design

Following the opening of the Visual Communications and Architecture departments at the College, a new department has been opened up at the library, which focuses on the design professions. The collection includes study and non-fiction books, journals and thousands of electronic titles in the field of art, design and architecture.

A display unit was also established, for journals in English and Hebrew, including Israeli architecture, Frame, Domus and Frieze. The display encourages creative thinking and serves a s a source of inspiration and learning for the students.

You are invited to see, form an impression and enjoy.

Israeli journals in the new display unit at the library

The Cup Goes to SCE!

The College futsal team, comprised of staff members and students, won the national league cup for work places following a 5-1 win in the finals over the ICL team.

The team players, headed by captain Meni Reuven, celebrated the win at a festive meeting with the College Rector Prof. Jehuda Haddad and the CEO Zohar Wolpert Cohen.

HOSTING THE NEIGHBORHOOD CHILDREN

As part of the many years of acquaintance and cooperation with the committee of the neighborhood surrounding the Be'er Sheva campus, SCE hosted the parents and children for a children's play and an evening of star gazing

Many families from the A Neighborhood in Be'er Sheva were guests of the College campus in the city and participated in two community activities, headed by the neighborhood committee and together with the Culture and Leisure Department at the Kivunim Company.

The first activity was a children's play "It's Mine" which was performed at the front of the Legacy Building, with popcorn and beverages for each child. Both parents and children had a wonderful time!

The second activity was a "Stars Observatory": children and parents gathered in the evening and looked at the stars through telescopes that were spread around the campus grounds.

These activities were part of a wide range of activities that take place in the neighborhoods across the city with the objective of reinforcing the community expanses in the neighborhoods. SCE hosted the committee activities as part of the long-term collaboration and acquaintance between the College and the neighborhood residents, surrounding the Be'er Sheva campus.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