ENGINEERING A BETTER WORLD

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SCE
SHAMOON COLLEGE OF ENGINEERING

Magazine of the Sami Shamoon Academic College of Engineering
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PRESIDENT'S MESSAGE

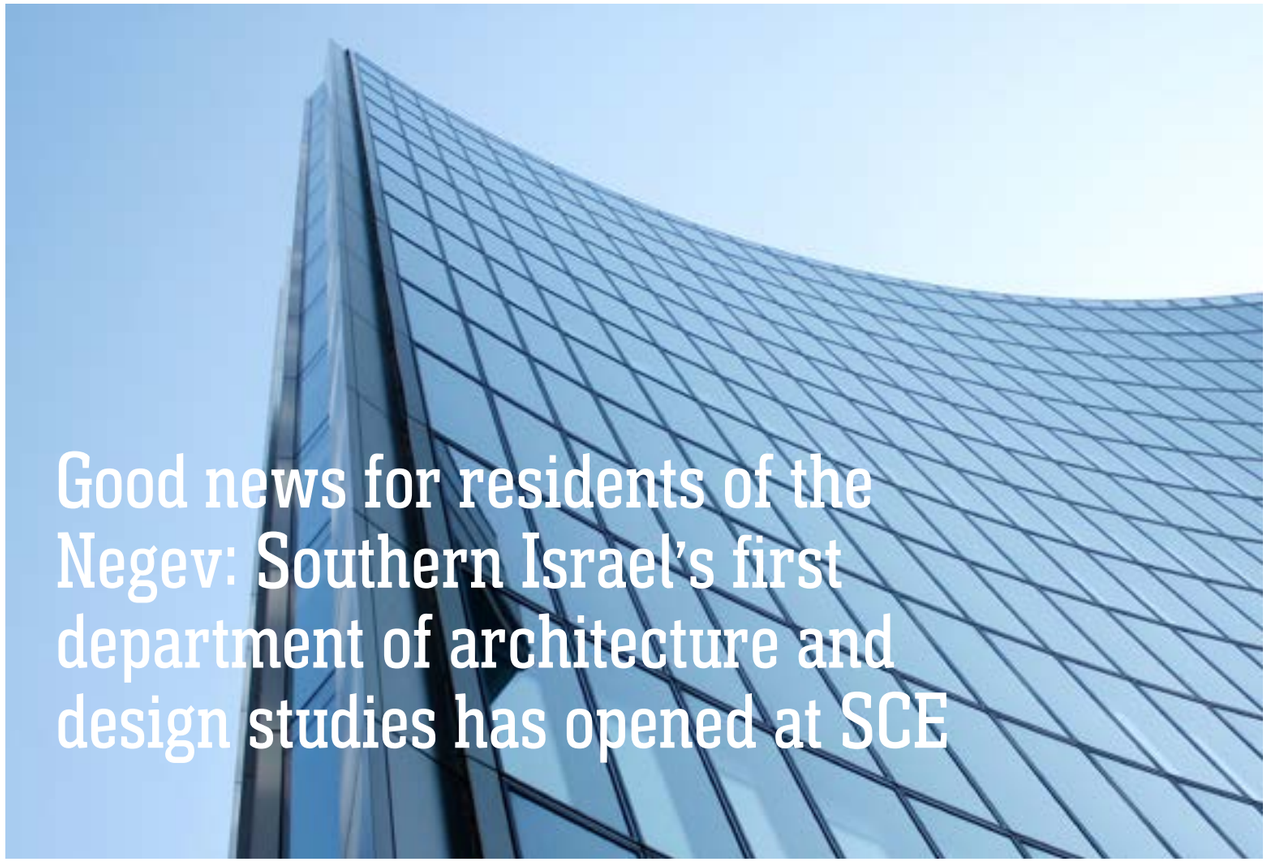
I am happy to inform you of our continued introduction of new research and development, with an emphasis on high-quality research and teaching and on our contacts with Israel's advanced industries.

The college maintains research ties and student exchanges with leading institutions in Israel and worldwide, thereby enabling our students to experience a high-quality learning environment which enriches their personal and professional world in a variety of ways.

This past year was fraught with health and security challenges, but I am happy to announce that more and more young people have chosen to study at SCE. The challenging year we have gone through has undoubtedly led many candidates to better understand Israel's job market as a hub for the high-tech industries and for the development of infrastructures.

Best wishes to our new members and our students. I wish you all great success in your studies.

Respectfully,
Prof. Semyon Levitsky
President of SCE



Good news for residents of the Negev: Southern Israel's first department of architecture and design studies has opened at SCE

The new department offers studies for a Bachelor's Degree in Architecture and Visual Communication • It will answer the need for studies in these fields occasioned by the accelerated development of southern Israel as a region rich in advanced industries

Not just engineers: At the start of the 2021-22 school year, a new department was opened at SCE Academic College of Engineering: The Design and Architecture Department. The new study tracks will allow students to pursue a Bachelor's Degree in Architecture (B. Arch) and a Bachelor's Degree in Visual Communication (B. Des).

The Department of Design and Architecture will answer the need occasioned by the accelerated development of southern Israel as a region rich in advanced industries and research centers, and also heralds important news for the region's young people, who until now could have studied and developed in these fields only at distant academic institutions.

The Department of Architecture is headed by Architect Netanel Alfasi, who graduated summa cum laude in Architecture from Tel Aviv University and holds a Master's Degree in Philosophy. Alfasi is an expert on technological innovation in architecture, held many exhibitions in Israel and worldwide and won important prizes, including from the America-Israel Culture Foundation.

The Department of Visual Communication is headed by Nino Biniashvili, an artist and educator, graduate of a Master's Degree in the Storytelling Program of the Art and Design Academy in Stockholm. Biniashvili has won many prizes, including the Gold Medal of the Israel Museum Prize for Illustration.

RECTOR'S MESSAGE

The 2021-22 academic year at SCE opens with an increase in the number of both undergraduate and graduate students. This success is credited to the concept which guides us: innovation, entrepreneurship and outside-the-box thinking.

We are very proud to launch the new Faculty of Design and Architecture, and are concurrently working diligently to establish a new campus in the city of Ashdod and to open new academic tracks.

This past year was accompanied by quite a few challenges related to the global COVID-19 pandemic. Each and every one of us was required to adapt to the new reality. With great effort and at a considerable expense of resources, we have successfully transitioned to online teaching, prepared hybrid classrooms, created a dedicated app for hybrid learning enabling integrated teaching, and more.

I wish all students, both new and old, a happy and successful new year and speedy and beneficial integration in the fabric of life and studies at SCE.

With warm regards,
Prof. Jehuda Haddad
Rector

A Hot Summer: All Projects Conventions are Completed

As with every year, the summer months brought the fourth-year graduates to the final stretch of their engineering studies with the presentation of their final projects. Most faculties held actual project conventions on the two campuses, where the works were displayed to the staff of lecturers and to guests.

First up were the software engineering faculty students, Beer Sheba campus. Their final projects dealt with varied and advanced fields combining implementation and research, including security, networks, social angles, software development methodologies, mobile applications, IoT, AI and Big Data. One of the outstanding projects was GreeBash by Edham Eldada and Saher Hatib, under the guidance of Dr. Hadas Hasidim as part of the Centre for Initiative and Innovation's "Accelerator" program, with its ambitious goal of saving municipalities up to half of their waste removal costs.

At the Ashdod campus faculty of software engineering an award of excellence was given to the project that stores medical information using blockchain. Two other outstanding projects were a system warning of failure to stop at stop signs by connecting to video cameras in the public domain, developed by dan Marinesco and Yarin Edri under the guidance of Dr. Tamar Sharut; and ParkVision, and IoT-based project that identifies blocked handicapped vehicles in real time, cautioning the driver doing the blocking, developed by Noy Nir and Ilan Kroter under guidance of staff member Benny Zand.

At the final projects convention of the chemical engineering faculty on the Ashdod campus students presented projects they had worked on for an entire year under the guidance of the faculty staff. One outstanding work was that by Amit Bar Maimon, who, under the guidance of the faculty head, Dr. Michal Goldenberg, developed a social angle project – 3D systems based on "intelligent" biological ink, containing probiotics, to assist in treating colitis.

As part of the Mechanical Engineering Week held by the mechanical engineering faculty on the Beer Sheba campus, fourth year graduates presented their engineering final projects in the fields of mechatronics, planning and design, energy, biomechanics and research. Representatives from the industry were present and showed interest. For example, the project by Ofir Gompel and David Bliacher, a device for rehabilitation of swallowing difficulties (dysphagia) was born out if a need at the Soroka Hospital rehabilitation department and was executed with the assistance of an accompanying team on their behalf, under the guidance of Dr. Nir Trabelsi, Dr. Zuk Torbovitz and Ms. Alona Ron; or the project by Hadar Ben Shabat, a system for improving lifestyles of children undergoing radiation treatments, which was developed in cooperation with the Hadassah Hospital under the guidance of Dr. Effi Zemach and Mr. Tal Gabli.

The graduates of the mechanical engineering faculty on Ashdod campus were the last to hold the projects convention. And it was worth waiting for.

Among the excellent final projects our eye was caught by a mini car for children with disabilities, developed by Irad Levy, Shani Meler under the guidance of Dr. Shaike Bilu and Eng. Ofer Medlinski.

At the projects convention of the industry and management engineering faculty, Ashdod campus, in addition to presenting excellent projects, the students enjoyed a guest lecture by Sharon Ben Ezra from the Airports Authority and a meeting with inspiring faculty graduates – Inbal Asraf, Eden Eliyahu and Lena Otkin.

Four years of study at the Electricity and Electronics Engineering Faculty culminated in final projects conventions held simultaneously at both campuses, Beer Sheba and Ashdod. The fourth-year graduates proudly presented posters of the works they had toiled over during their final year of studies. Among the excellent projects presented in Ashdod was that of Ariel Hankin and Rafi Michaeli, which dealt with an algorithm to evaluate fingerprint quality based on picture processing and machine learning, under the guidance of Dr. Tom Tringo; and that of Lavi Chen and Lior Katzir – "green energy in skyscrapers", a project under the guidance of Dr. Peter Becker; on the Beer Sheba campus, an outstanding project was that of Ofri Koren and Dima Zegeinov, who developed a "control system for hothouses with IOT communications among the various installations".

Congratulations to all the graduates on the great projects, good luck in your careers as engineers, and see you at the graduation ceremony!

During COVID-19 too – SCE "engineers geology"

In the spirit of the COVID-19 restrictions, students in the course "Introduction to Engineering Geology" held the traditional final exhibition online • The exhibition included short videos illustrating the studied topics

Students of the course "Introduction to Engineering Geology", which is studied in a project-oriented format in the Department of Structural Engineering at Beersheba Campus, held a virtual academic exhibition in the spirit of the COVID-19 restrictions.

The students split into work groups, selected a topic from the course's topic list and studied it independently, with direction and guidance from the course's teaching staff. Normally, they would be required to design and produce an exhibit illustrating their topic of choice, such as rock types, volcanos, earthquakes, sinkhole formation, et cetera. This year, due to the COVID-19 restrictions, they were asked to produce a short video illustrating the topic they had studied.

A panel of judges comprising senior academics and geologists announced the winning videos:

The "Geysers" group's video – by Sagi Gamliel, Barak Hazan, Re'em Mor and Bar Saadi.

The "Sedimentary Rocks" group's video – by Maayan Hayat, Artyom Yakimishin and Adi Cohen.

A video about the formation of the Negev's craters – by Tehila Efrat.

The Head of the Department of Structural Engineering, Dr. Dagan Bakun-Mazor, said that the virtual exhibition enables mutual study, with the students presenting the fruits of their labor to their classmates.

Searching for (and finding) solutions for people with disabilities

A student in the Department of Mechanical Engineering who is dealing with arthritis has, along with her classmates, developed an assistive handle allowing people with disabilities to easily and comfortably open doors

Moran Hassid, a third-year mechanical engineering student at the Ashdod Campus, has suffered from arthritis for a long time now. Moran and her classmates – Alon Elron, Yuval Rahmani and Yaara Maman – found an engineering solution to help Moran, and people with disabilities in general, to push the door handle easily and simply.

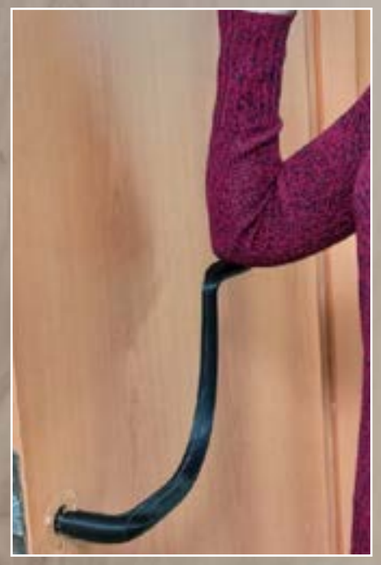
As Moran tells us: "As part of the course 'Product Design and Development 1', in the Product Design and Development track, we were asked to think of a handle that assists people in exerting strength – an accessory to help people with disabilities. I instantly thought of my own daily hardships and brought them up to the group's members. Opening a door is always a problem when I'm having a painful attack".

The assistive handle developed by the students is intended for regular use and replaces the handle we all know. It is comfortable, ergonomic, latches onto the door handle's hinge and makes it unnecessary to grip the handle, allowing people with disabilities, such as people dealing with chronic arthritis accompanied by constant pain or people whose fingers were amputated, to open the door by means of a gentle press of the open palm or by using their elbow.

Avihai Shurin, Head of the Product Design Track in Ashdod, tells us that the students were asked to develop a product using sandcasting technology, and, following the design process, to manufacture to product. The course was one of several practice-integrated courses adopted by the Dean's Office and included a scholarship in the amount of NIS 600 for everyone who successfully completes the course. "The assistive handle developed is a good example of the innovative perspective we impart to students at the college, providing considerable added value to Israeli society and to society in general", he emphasizes.

According to Dr. Guy Ben Hamo, Head of the Department of Mechanical Engineering at the Ashdod Campus, the studies in this track are customized to the needs of Israeli industry, which seeks to develop innovative products meeting the needs of a variety of users. These studies include design workshops and laboratories for the development of thinking and creativity, as well as for inculcating the design and development capability required of engineers taking part in development teams which incorporate multiple disciplines.

"The students have developed a vital, socially important product which will greatly improve the quality of life of people with special needs. The multi-disciplinary training we impart to our students grants them a significant advantage in the planning and development of innovative products, to the public's benefit", stresses Dr. Ben Hamo.



Let's not throw our money in the trash: The project that will save the authorities approximately 50% of garbage removal expenses

Students of software engineering at the Beersheba Campus presented an ambitious final project, which will allow the authorities to save considerable funds on garbage removal expenses • The project, based on sensors, has already attracted much attention

"When people heard of the immensity of the project I was undertaking, they thought I was mad", smiles Adham Aldada, 29, originally of Kseyfeh, a student of software engineering at Beersheba Campus. "My friends told me: 'Why don't you focus on something smaller?' But I decided that if I'm doing a final project, it'll be a comprehensive, big and high-quality one".

The project Adham is referring to is a project for streamlining garbage removal at the local authorities, on which he worked with his classmate Saher Hatib, 23, originally from Maghar.

The project is a control system dubbed GreeBash, which is intended to improve the removal of trash dumpsters based on information obtained from two sensors: A distance-measuring sensor – which checks the distance between the bottom of the dumpster and its lid and converts it to a percentage of the volume, and a slant sensor, which recognizes the moment when the dumpster is moved to be emptied and displays information critical to managing the garbage collection process.

"There was massive workload on the project. The work encompasses much more than a single field and requires a lot more than two people", says Adham. "Luckily, our teacher, Dr. Hadas Hassidim, recognized the project's scope, pushed us not to quit, supported us and referred us to relevant entities". The sensors manufactured by the students as a prototype displayed an expected time of use of three years, and their cost is estimated at a mere few hundreds of shekels (is this the cost per dumpster?). They communicate among themselves and relay the information to the system in real time, thereby allowing the local authority to monitor the full dumpsters and send the garbage removal drivers to the exact locations, setting a short route which has fewer traffic jams. The worktime of the garbage removal workers is shorter, and there is supervision of the quality of removal. The authority will also be able to identify areas where the dumpsters are emptied more frequently, and could provide the residents with more dumpsters.

Over the course of the work on the project, Adham and Saher contacted the Bnei Shimon Regional Council and worked according to the needs indicated by it. Initial estimates indicate that the system is expected to save the authorities approximately 50% of all garbage removal expenses. "The money each authority will save on unnecessary garbage removal payments could be directed at other projects to improve the lives of the residents", says Adham. "I'm proud of the project and I'm glad we didn't give up on it, despite the difficulties. All thanks to the encouragement we received from our instructor, who kept telling us how great we were…"

Walk safely – with infusion and a walker too

An adapter between the infusion rack and the walker, developed by students of mechanical engineering from the Ashdod Campus, will also allow patients who are using a walker to move around independently and safely

The familiar sight of hospital patients forced to move about slowly and cautiously with a walker, their infusion rack dragging after them, is soon going to be a thing of the past. All thanks to three students from the Department of Mechanical Engineering at Ashdod Campus, who designed and developed an adapter between the infusion rack and the walker, allowing the patient to move around freely and safely with the walker, without dragging the infusion rack after them or requiring the assistance of another person.

The students, Nati Karasenti, Tal Karavani and Yossi Martin, third-year students of mechanical engineering, developed the adapted under the leadership and guidance of the college's faculty, as part of the course "Product Design and Development 1" in the Product Design Track, which this year was held online.

The adapter is connected to the walker using geometric locking and a fastening handle: The user attaches the adapter to the middle central bar of the walker, then fastens it using a fastening handle. Then, a standard infusion rod is inserted into its designated place on the adapter and fastened using an additional fastening handle. Now the infusion bag can be hung on the rod. The adapter can be attached on either side of the walker, as the user requires.

According to student Tal Karavani, the product allows an easy and comfortable connection between the infusion rack and the walker, and serves two primary purposes: First, to allow patients to independently move abut, and second – to save on medical personnel.

"The development process was interesting and fun and the experience was special and educational", she says. "We used the engineering knowledge we have amassed these past few years and learned to work efficiently and effectively, even during the challenging times of COVID-19".

Avihai Shurin, Head of the Product Design Track in the Department of Mechanical Engineering in Ashdod, states that the team who developed the product worked remarkably well for the entire duration of the project, "Like real engineers", and effectively "demonstrated to us the capabilities of our teaching method, which combines theory and practice".

Dr. Guy Ben Hamo, Head of the Department of Mechanical Engineering in Ashdod, further says that this is a vital product, which will greatly improve the quality of life of hospital patients, and especially of elderly people and people with special needs.

007 – we're way ahead of you!

A tiny rock at the heart of a hostile nation, an innocent part of the landscape – yet containing espionage systems powered by solar energy and transmitting 24/7 • the final project of two students of mechanical engineering, which sounds like the stuff of a science fiction movie, is intended to meet the needs of the security industry

The final project by Guy Sarousi and Guy Dadon, of the Department of Mechanical Engineering at Beersheba Campus, is entirely unusual: An autonomous spying rock, powered by solar energy.

For those of us less in the know, it should be said that espionage rocks have been in existence for many years, but their technology requires that forces occasionally get to the scene to replace the batteries and charge the device. The need of an autonomous rock was brought up by entities in the securities industry.

Under the guidance of Dr. Nir Trabelsi and Ido Sabag, the students inserted an innovative optic fiber technology into the rock, leading to the systems and the backup batteries being recharged by solar energy and operating constantly, by means of a hidden solar panel.

Before they created the system, Dadon and Sarousi researched the subject in the academic and professional literature. They characterized the requirements made of the product, developed a compact system combining optic fibers with a solar panel and conducted feasibility experiments. Having obtained information and capabilities, they made output calculations, to ensure that the system is usable 24/7, and began assembling the systems and producing the rock.

Thought the project is intended to achieve a security purpose, these rocks are also suitable for agricultural and home use. The rock can, for example, be placed in the home's garden, as an ornamental rock also used for guarding and recording theft and break-in attempts.

According to Dr. Nir Trabelsi, the project showcases an impressive combination of entrepreneurship, innovation and advanced technologies. "The engineering and multidisciplinary capability acquired by the students during their studies is reflected in an original and useful project, which led to a working and nearly final product. The students worked tirelessly for the project's success, even during the challenging COVID-19 period, and met the high bar they had set themselves".

Dr. Gdalia Mazor, Head of the Department of Mechanical Engineering in Beersheba, further tells of the challenging semester, during which no frontal meetings with the students took place: "The studies were held on Zoom, and the instructors and technical staff printed the products on the college's 3D printers. However, to the extent permitted, students met with the technical staff and inspected with them the products and accessories developed by them. Thus, despite the constraints, they were able to successfully develop and manufacture a high-quality prototype".

Reducing the load on social workers

Engineering a better future: Students at SCE have developed a user-friendly app to allow social workers to organize the information they accumulate and track patient progress

The final project of Kfir Nahmani and Shimon Emuna, software engineering students at Beersheba Campus, was born from the need to assist social workers at the city's Parents and Children Center and reduce the load imposed on them.

Under the guidance of Dr. Hadas Hassidim, their professor at the college, the two developed an app to assist social workers in tracking the information and progress of each and every family according to the needs and plans customized for that family.

The Parents and Children Center treats families at risk according to a court order. These families are provided support by social workers to help them break the cycle of risk. The social workers meet with the families once every week or two, give them various tasks and check whether they accomplished those tasks. Due to the multitude of patients, tasks, meetings and written reports, the employees had trouble tracking the progress achieved by the families.

The students worked in full collaboration with the social workers, attended to their needs and built the system accordingly. The app allows the social worker to compile a schedule for each family, give them tasks and send to-do reminders. It also allows the employees to easily track each family's compliance with the objectives set for it, so that conclusions can be reached and lessons can be learned for later.

> "We developed the app after learning from social workers that they were overwhelmed by their workload and realizing that we could assist them by technological means.

"We developed the app after learning from social workers that they were overwhelmed by their workload and realizing that we could assist them by technological means. We consider our project to be an opportunity to contribute to the community and assist employees, parents and children, and we naturally hope that the Ministry of Welfare in Beersheba will implement the app and use it regularly for its work", says Kfir Nahmani.

The first female Bedouin high-tech entrepreneur – and she's one of ours!

Aisha Abu-Jabr, a first-year student of Electrical Engineering and Electronics at Beersheba Campus, developed an app to serve as a universal digital wallet at gas stations • Her startup is already on its way to the App Store

If and when the use of the Apli app becomes commonplace at gas stations in Israel, remember that the person behind the app is Aisha Abu Jabr, and ambitious Bedouin young woman who is all of 19 years, a first-year student in the Department of Electrical Engineering and Electronics at Beersheba Campus.

Apli, which is expected to hit the Android and iPhone app stores as early as in the next few days, will allow customers of all gas stations and electric charging stations to pay digitally, simply and quickly.

According to Aisha, the world of startup and entrepreneurship interested her long before she started her studies at SCE. She searched online and discovered the "Negev Startup" program, which provides tools for the development and promotion of ideas and projects. She was accepted into the program, where she learned to build a startup from the ground up.

Aisha is an alum of "Desert Stars" – an organization acting to nurture a new generation of Bedouin leadership. The organization referred her to Adam Bismuth, a startup entrepreneur, "Who came in at the outset of the process and who to this day accompanies me on any question where I'm undecided and on anything I need", says Aisha. "Many times I've had to make snap decisions, and in order not to make mistakes – I'd always call him, and he'd help me".

Aisha has this to say about her studies at the college: "I chose to study electrical engineering and electronics out of my own personal desire. The studies make me confident of my own knowledge, give me tools to solve problems and think outside the box, and also acquaint me with the world in which I'm living. I've always dreamed of a better world, and this is my motive for searching for solutions to problems that we encounter on a daily basis".

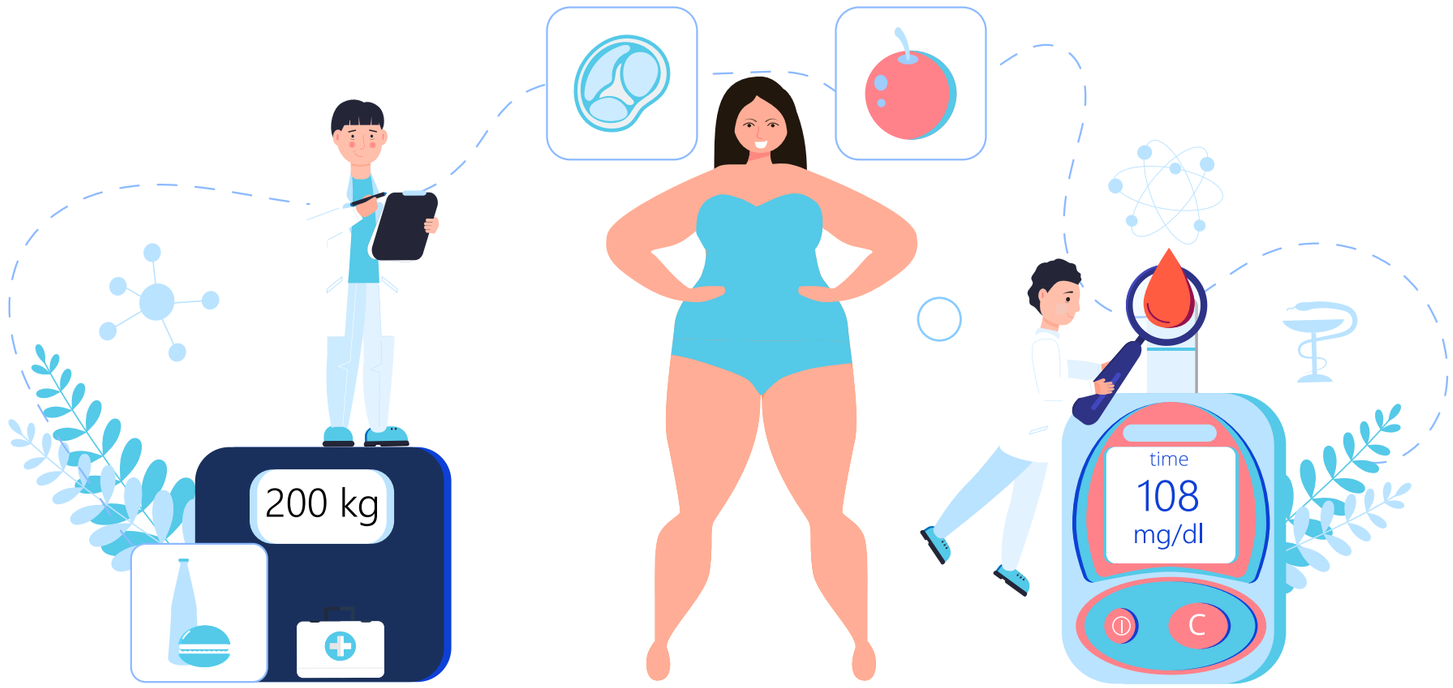
As a Bedouin girl, she also had difficulties understanding and entering the world of entrepreneurship. "I racked my brain trying to understand and study this world. With my family's encouragement, I successfully created my startup at the age of 19. I'm proud to be the first Bedouin woman to create a startup, and I'm glad to see other girls enter this incredible world. I try to direct and guide them as much as I'm able".

Aisha is proud to say that the first investor in her startup is Bedouin. "That's another thing that's happening in the sector for the first time. He has so far invested 100,000 shekels, and the amount is expected to increase in the future".

Her expectations do not end at successful sales. "I'd like to see deep integration by Bedouins in the world of entrepreneurship as early as within the next few years. I see myself, in ten years, as a successful and leading entrepreneur".

COVID-19? Obesity is the true pandemic of the 21st century

Some of us would rather lay the blame on genetics, but in this case – unlike the color of our eyes – the genetic component is not an exclusive one! • Lifestyle habits can either "conspire" with our less beneficial genetics, or it can fight and defeat it • The decision whether to rise to the challenge is ours



Dr. Julia Penso, Department of Chemical Engineering, Ashdod Campus

Before the world had the dubious pleasure of getting to know COVID-19 up close and the WHO announced the pandemic, we had a life here and had other concerns.

For a year, maybe even two, we've had to put aside the world's other problems and attack the problem of finding solutions for this new scourge. And now, a little more than a year later, we can already envision the end of the pandemic. Humanity, having exerted monumental shared effort, is nearing victory. It may be a bit early to uncork the champagne bottles, but we can already start smiling.

But even that smile cannot last, because we will soon have to resume our treatment of that other pandemic, we've swept aside due to COVID-19, but which is set to engage our attention long after COVID is gone and forgotten – the obesity pandemic. Yes, that is the correct definition – a pandemic, just as the WHO defined it as the "pandemic of the 21st century".

Obesity is the fifth most prominent global cause of death. 70% of obese people can also suffer from diseases such as diabetes, cancer, hypertension and hyperlipidemia. Studies indicate that being overweight causes, among other things, 80% of type 2 diabetes cases, 35% of congestive heart failure cases and 55% of hypertension cases. Even in the case of COVID-19 and at-risk populations, "obesity" is mentioned as a highly significant risk factor.

So, let's put COVID-19 aside for a bit. It's not going to be around much longer. But obesity is.

So how are we doing? We're at the same level as the rest of the world, so that the problem is both global and national. More than half of Israelis and 35% of Israeli children are overweight; 27% (of Israelis? Of obese Israelis? Of children? Of obese children?) are morbidly obese, a condition known to be related to such chronic illnesses as diabetes and heart diseases. This is merely pre-COVID data. Needless to say, this past year – as we went from one lockdown to the next – things only grew worse.

According to the forecasts based on obesity data in Israeli children, every third child will become diabetic by age 50.

Another illness which poses an increasingly more concrete risk to our health as we age is Alzheimer's Disease – one of the common types of dementia.

A study published in 2016 encompassing 2.3 million people, of whom approximately 100,000 had dementia, indicated that people with type 2 diabetes are 60% more likely to develop dementia in general and Alzheimer's in particular.

The link between diabetes and Alzheimer's was studied intensively. That link is strong and clear, and has even led to Alzheimer's also being dubbed "diabetes of the brain" and "type 3 diabetes". Two hormones – insulin and leptin – underlie that link; or, to be more precise, it is the resistance (insensitivity) to both that underlies it. The problem so familiar to us in diabetics also reaches the brain and leads to disruptions in metabolism, which in turn pave the way for Alzheimer's.

The surprising piece of information is that historically, the brain belongs to the group of organs whose function is not dependent on insulin. Not only is this not the case as insulin is indeed present in the brain, it also turns out that a high concentration of it characterizes two highly significant areas of the brain: the hippocampus, which is in charge of memory, and the hypothalamus which is in charge of regulating our eating habits.

The bad news is for people who have already been diagnosed with dementia. Very little can be done to improve their condition and stop the deterioration.

But there is also good news: If we are aware of the risk factors and understand them, we have a real chance of sparing ourselves this terrible illness which destroys our very personality. If the road to Alzheimer can start at diabetes, and diabetes follows obesity – then we all realize very clearly what change we need to make.

Some of us would rather lay the blame on genetics, both for obesity and for the morbidity which directly follows it. But in this case, unlike the color of our eyes, the genetic component is not an exclusive one. The environment – or in other words, our daily conduct – is very much a determinant factor. Lifestyle habits can either "conspire" with our less beneficial genetics, or it can fight and defeat it. The decision whether to rise to the challenge is ours.

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Alumni of the Industrial Engineering Department host their professors

The head of Tara Dairy's Production Division, along with other alumni of the Industrial Engineering Department, have invited the department's professors to visit their workplace and gain an impression of how their studies at SCE have benefited their career

Faculty members of the Department of Industrial Engineering at the Beersheba Campus were invited to visit Tara Dairy in Netivot. The invitation was issued by the head of the dairy's Production Division, Itai Houshmand, who graduated from the department about five years ago, and other alumni of the department employed at Tara.

The visit included a tour of the company's production facilities and an interesting lecture by Itai which concerned professional and operational elements of the dairy, with an emphasis of the professional tools used by him in his work.

Itai also presented the ways in which the dairy deals with the COVID-19 pandemic, in the operational aspect, and told of his decision, made about four years ago, to move from a senior position in the high-tech industry to the food industry. According to him, the study methods and tools imparted by SCE – such as teamwork, analytics, outside-the-box thinking, et cetera, are prized by employers and generate a positive image of the college and its alumni.

Over the course of the tour, the faculty members of the Industrial Engineering Department met with other alumni of the department who are employed in various positions – design and manufacture, procurement, logistics, executive management, et cetera. The alumni stated that many courses taken by them at the college were the foundation of their day-to-day work at the plant.

A new structural laboratory upgrades teaching and research capabilities

The lab allows experimentation on large structural elements using an advanced actuator (piston) installed on a durable frame

In early June, the works for the construction of the new structural laboratory in the basement of D Building (60) were completed.

The lab, which had several years elapse from the dream of its construction to its operation, upgrades the teaching and research capabilities of the Department of Structural Engineering. It allows experimentation on structural elements such as large-scale beams and ceilings.

The experiments are conducted using an advanced actuator (piston), permitting optional control of the pace/manner of conveyances or the load (for example, loads simulating earthquakes can be used).

The actuator, which can operate up to 50 tons of power, is installed on a durable frame, planned especially so as not to develop deformations over the course of the experiments, and which is concurrently able to provide a response allowing experimentation on elements with various developers and cross-sections.

The actuator, along with all related equipment, was purchased by the college. The construction of the frame was mostly financed by the college. An additional amount came from an external research budget obtained from the Innovation Authority.

“You’ve chosen the right profession!”

Said CEO of Adama at the scholarship awarding ceremony for honors students from the Department of Chemical Engineering

On May 18th, 2021, a ceremony was held to award the scholarships provided by Adama Co. to five honors students in the Department of Chemical Engineering at Beersheba Campus. The company dedicates the event to the founders of “Makhteshim” and “Agan”, who, at the time of these companies’ founding, were four young and groundbreaking entrepreneurs: the late Zvi Zur, Micha Piekarski and Eliahu Teomim, and Israel Tamir, may he live long.

The scholarships were awarded by Hadran Olami, Chief Executive of the Adama Makhteshim plant, Prof. Shimon Levitsky – SCE’s incoming president, Prof. Victor Kagalovsky – Dean of the School of Engineering, and Prof. Ariela Burg – Head of the Department of Chemical Engineering.

The recipients of the scholarships are students Shir Levi, Tomer Khouri, Shir Shai, Olga Kushnir and Julia Schwieger.

The honors students were congratulated by Hadran Olami, CEO of Adama, who said, among other things: “You’ve chosen the right profession! Chemistry is everything, and with this profession you can aim high and get far. I started as a young engineer at a production facility, and from there I progressed and grew to become chief executive of a plant. Well done to you all, and good luck down the road”.

Tomer Khouri gave thanks on behalf of the scholarship recipients and said: “We’ve been selected by two entities of such importance – SCE and Adama. That’s quite an achievement! We’d like to thank you for the great privilege of being awarded these honors scholarships. It is a distinguished award, which requires us to prove, in the future, that we were worthy of it and to set an example for posterity. Thanks to everyone involved”.

“I didn’t believe that in one year I’d know Hebrew and find a line of work that I’d love so much”

A joint plan of SCE, the Ministry of Aliyah and Integration, the Lauder Center of Employment and Kivunim Co. allows young people who immigrated to Israel from the countries of the former USSR to study for a Master’s Degree in Software Engineering at the college and to integrate into southern Israel’s high-tech industry

For the eight years of her work at a Moscow bank, Alona Kanisnev dreamed of a fresh start in Israel. After immigrating to Israel with her husband, they both took a diving class in Eilat and fell in love with the south of Israel. The same happened to 29-year-old Anastasia Iksar, who immigrated to Israel from Odessa, Ukraine, straight to the south of the country, and worked as a cashier.

What Alona and Anastasia have in common is this: They both have a BSc and they were both admitted to a unique Master’s program at SCE, led by the Ministry of Aliyah and Integration and Kivunim Co.

The unique program, which is now three years old, is intended for immigrants from the former USSR countries and combines studies, employment and leisure. It includes Ulpan studies, studies for a Master’s Degree in Software Engineering, unique contents and tours of the country, residence in the south of Israel, various scholarships and a course dedicated to employment, provided by the Lauder Center for Employment in the Negev.

Along with Alona and Anastasia, 12 other male and female immigrants made Aliyah to Israel in 2019 from the former USSR countries, and began the program with them. They are all aged 23-30, hold a BSc, and have arrived in Israel with no knowledge of Hebrew and with plenty of motivation to live in the Negev. During the first year, they studied at Ulpan and in SCE’s preparatory program, and now, in their second year (if the paper is out at the start of the academic year, maybe that’s their third year by now?), they study for their Master’s Degree in Hebrew, like all other students of the college.

Maggie Goberman, Coordinator of International Academic Programs at the college, who accompanies the program’s participants, says that SCE helps them by providing them with tutoring, individual hours and revision of the material, in observance that the studies are conducted in Hebrew.

So that the immigrants could encounter the world of Israeli high-tech, there is a collaboration with the Lauder Center of Employment in the Negev. The center has already held for them a career course, several weeks long, under the guidance of mentor Ilana Ginsburg, a Senior Human Resources Manager at the global cyber company Rezilion. The course dealt with integration in the Israeli job market, and in the south’s market in particular, including training for teamwork, CV writing, arrival at a job interview, self-branding on LinkedIn, and more. According to Ilana, the Israeli job market is light years away for that of the former USSR countries (Commonwealth of Independent States).

Recently, Alona and Anastasia were hired. Alona was accepted as a software engineer in a high-tech company in the south, and Anastasia also integrated into high-tech, in human resources.


Anastasia


Alona

“The world of employment here is very different from the one in Russia”, says Alona. “There’s no LinkedIn there, and the culture is completely different. So it took me some time to realize how to conduct myself. I’m happy for the chance I’ve been given. I didn’t dream that the day would come when I’d know Hebrew, have a Master’s Degree in Software Engineering and work in Israeli high-tech.”

And Anastasia says: “The studies in Israel made me realize what I’m good at, what I love and where I should be. I didn’t believe that in one year I’d know Hebrew and find a line of work that I’d love so much”.

Dr. Avshalom Danoch, Head of the Academic Administration at the college and the leader of the program on its behalf: “As part of our agenda and mission of nurture excellence among various populations and lead to social prosperity, we initiated, with the help of our fantastic partners, a program encouraging youths from the former USSR countries to come to Israel, learn a practical profession and successfully integrate in Israeli society”.

“Graduation Week was one of the most moving weeks in our grandmother’s and our mother’s lives”

The wonders of COVID-19: Matani Lankry began his studies at SCE one year before his brother Yogev, but last June they both graduated in engineering

Yogev

Matany

It was an exciting week at the home of the Lankry family in Ashdod: Brothers Matani and Yogev both obtained their degree in engineering.

Matani Lankry had already completed his degree in Structural Engineering in 2019 and was supposed to be awarded his degree in the June 2020 ceremony. Due to the COVID-19 outbreak, the ceremony was postponed and only took place in June of 2021. Thus, as it turned out, he was awarded his degree along with his brother Yogev, who graduated one year after him.

“When I was in high school, I didn’t really apply myself to my studies; I never got into the groove of it. I knew what I liked and wanted to do, but never found a way to realize myself in school. By the time I got to the college, I knew that that was the time to give it my all so that I could succeed”, says Matani.

Not only did he finish the preparatory program and was admitted to the college, but also became a prominent student there. Even before officially starting his studies, he was offered to tutor the prep program’s next class of students. He was on the dean’s honor roll three times and even took part in a student exchange program in Las Vegas, to which he was admitted thanks to his academic achievements.

Over the course of the program – a special collaboration between the college and a Las Vegas university – Matani liaised with various researchers in the field and amassed extensive knowledge. In the past two years, he has been working at one of Israel’s largest planning and construction firms and has been taking part in large-scale, diverse projects.

When asked of the experience of going through college alongside his brother, he says: “I didn’t get to see Yogev a lot during the studies. At first, we’d run into one another in the hallways occasionally and ask each other how we were doing, but overall we were each in our own studies. Sometimes I’d help him with his classes and with questions about the material, but at the end of the day we each had our own journey”.

But if you were to ask Yogev Lankry, who this year graduated with a BSc in Mechanical Engineering, “The fact that my brother took many of the same classes I did really helped me. Some of the subjects were Greek to me at first, and I asked him to explain them to me. Sometimes we’d meet at our parents’ home on the weekends and discuss our studies and things we should know”.

From summer camp timber frames to structural engineering at SCE

Ohad Kamil couldn’t understand why the wooden structure he wanted to erect at the Scouts summer camp was not issued a building permit • When he insisted on getting an answer, he was told: “If you really want to know, go study structural engineering” • 12 years later, he graduated from SCE

Last June, Ohad Kamil excitedly left work at his workplace of David Engineers Co., a large planning company in Tel Aviv, and made his way to Beersheba to be awarded the degree on which he had toiled for four years.

Ohad had known very well for several years that he would choose structural engineering as his major. “At age 18, when I was in the Scouts, I planned to construct a wooden dome that would stand without supports. After I made construction plans, I tried to have them approved by the camp’s construction administration. They didn’t approve anything I showed them and told me: ‘If you really want to know, go study structural engineering’. So I went to the college, studied and got my degree”.

Graduating was not an easy task for Ohad. “At school I had many difficulties in adapting to the system. I’m really proud to say that I succeeded in spite of those difficulties. My success is largely thanks to the personal treatment given to students at the college. I felt that the faculty here wanted to teach, supported the students and was eager to help us succeed”.

“The college’s ability to adapt itself to the various needs of the market is an immense advantage”, notes Ohad. One of these, for example, is the earthquakes specialization track in the department. Ohad, who studied in that track, explains: “I chose that track thinking that even if I worked in implementation rather than design, I’d consider that to be added value that would allow me to achieve professional advancement. As part of the specialization, I had the chance to conduct research at Padua University in Italy, where we studied options for improving the durability of structures during earthquakes. That’s a highly important issue in our part of the world”.

Ohad states that the studies at the college provided him with an immense edge in the job market. “Many of my coworkers, who studied elsewhere, are awed by the method and the important practical tools imparted by the studies at the college, which are not imparted to the same extent at other educational institutions”.

Nino Biniashvili

Head of the Program in the Department of Visual Communication

Nino Biniashvili, who has been appointed as Head of the Program in the Department of Visual Communication at SCE's new Faculty of Design and Architecture, is an illustrator and designer engaged in a variety of fields, including writing, illustration, books and video.

She is the daughter of a typographer father and a pianist mother, and all her childhood revolved around music, art and design. Growing up in the shadow of the Georgian Civil War of the 1990s, she imbibed the values of communism alongside her Jewish identity. The influence of these values is felt in her choice of content for her work.

At age 19, Nino immigrated to Israel alone, and was later admitted to the Visual Communication study track at Bezalel College, from which she graduated summa cum laude. She went on to study illustration in Hamburg and to take her Master's Degree in a storytelling program in Stockholm. Her professional career also led her to Canada and the US, and in 2015 she returned to Israel and settled down in Jerusalem.

In 2018 Nino was awarded the Gold Medal of the Israel Museum Prize for her illustrated book "On the Edge of the Black Sea". The book comprises five short stories based on Georgian myths from her childhood, highlighting concepts of gender, feminism, religion and nationality. "The secret of the book's success is the combination between the originality of the format – short storis based on legends and mythology, the abstract illustrations and the emphasis on dimensions of gender and feminism", she says.

As noted above, she has this year been appointed as Head of the Program in the college's Department of Visual Communication. "These past few years, and especially during the first COVID-19 lockdown, I realized that management in an academic environment and the formulation of a pedagogical strategy are directions that interest me and that I can succeed in. The program will contribute to the Negev region, will expose more youths to the field and help them integrate into the Israeli industry. I personally find that highly engaging. Seriously, I think that's a real mission".

She says she greatly enjoys having a dialogue with students of design, understanding their way of thinking and seeing that some of them go against the flow and try new things. "I believe that with direction and a suitable study program we will nurture and enrich the younger generation with technological and artistic knowledge, which will allow us to turn potential talents into creative designers who show vision, flexible thinking and personal motivation".

In her eyes, the combination of the classical background and the constant search for innovation and technology is the key in the field of visual communication. "As a lecturer and as head of the program, I take care that the students will have all the current tools, along with a fundamental infrastructure of thinking and perception capabilities. These will grant them a unique edge in the job market and a firm grip on their own personal journey. I personally am greatly engrossed in the philosophy of technology, technology as a tool and as a way of thinking; an investigation of the manner in which technical tools express our morality and even affect it".

"Most of all, a designer has to be in tune with themselves and with their surroundings", she says. "The future of the study of design lies in the creation of a self-attuned community, in which every individual has ambition and self-expression, alongside concern for the world around them. Beyond that, it's important to maintain international relations and take part in the progressive discourse, because 'Values is not a dirty word'".

Olga Potaznik

Head of the President's Office

I was born in the city of Kishinev, which, in the context of the Jewish people, is known for its terrible history. When I was 17, my life became split to "before" and "after", when I immigrated to Israel as part of the Aliyah for Youth Without Parents program. Ever since, Israel has been my homeland, my children's homeland and the most beautiful place to live, mainly thanks to its human capital.

During my undergraduate studies, I rented an apartment in Neighborhood B in Beersheba, on Bialik Street. One day, a construction project sprouted just outside my window, dubbed "The Academic College of Engineering of the Negev". I had a premonition… Today, I've been working for almost two decades at the college, which has long ago become my second home. With my coworkers, we have grown, gotten ahead in life, had and raised children. We took care of the students' wellbeing and were overjoyed to see them graduate, receive their degrees at the ceremony and work as successful engineers at their workplaces.

Academia is a world unto itself where everyone has a place – students, faculty members, researchers and administrators. For ten whole years of work as student secretary, I enjoyed being part of the Chemical Engineering Department's activity, helping students through the process of studying for their degree, accompanying the academic staff in the teaching process and taking part both in successes and in the finding of solutions for challenging situations.

During my time as Assistant to the Dean of the Faculty of Engineering, I was exposed to a different angle of the work and was astounded to discover the college as a coordinated and efficient executive mechanism, one which undergoes constant development and constantly attains new objectives.

Many years of experience in working with people have proved to me the importance of interpersonal communication as an important and vital tool for understanding the formation of conflicts and crises between individuals and groups and for solving and preventing such conflicts. In my free time, I expand my knowledge in this fascinating field. Among other qualifications, I have gained mediation skills and even obtained a professional certificate.

Olga Potezhnik was selected as Esteemed Employee of the 2019-2020 Academic Year, for, among other reasons, a significant contribution to the MSSE Masters Program for People from the Former USSR.

Two intense months of career development

Two months of intense activity of the Career Development Center culminated in a series of alumni-student panels and an online employment fair, with the participation of 55 companies

SCE's Career Development Center has for 17 years now been assisting the college's students and alumni to successfully integrate in the job market.

The 2019-2020 and 2020-21 academic years emphasized guidance and assistance in view of the COVID-19 crisis. The individual consultation services were significantly enhanced throughout the entire academic year and the summer recess, to take place in the format of Zoom meetings.

In April and May of 2021, a large number of lectures and workshops took place on that platform, concerning such subjects as CV writing, the job search in times of crisis, improving one's promotive profile on the LinkedIn platform, English CV writing and job interview preparation. Moreover, this year saw the first instance, in every department, of the holding of an alumni-student panel. Each panel comprised four participating alumni from various fields and positions, who gave an account of their work and of the employment prospects, with an emphasis on tips for job integration.

The highlight of these two intense months was the annual job fair, which this time was held online and was attended by 55 companies, including Solel Boneh, Teva, Israel Aerospace Industries, Israel Nuclear Research Center, Dell EMC, Osem, SodaStream, Tambour, Cambium, Electra, ICL, Applied Materials, Elbit, Netafim, the Israeli Air Force, Mekorot, Vichy, Israel Railways, Perrigo, Baran Group, Ludan Engineering, Kamada, BTG, et cetera.

The online fair comprised approximately 40 virtual sessions, which allowed students to speak to the employers and become acquainted with the companies' activity and the open positions. Approximately 1800 students and alumni logged into the online fair's system, and there were approximately 1200 logins to the virtual sessions. The employers expressed great satisfaction with the fair and with the level of the students and alumni.

To schedule a consultation at the Career Development Center:

Beersheba Campus – zoharza@sce.ac.il;
Ashdod Campus – noasa2@sce.ac.il

Contributing to a better world: Private tutoring on "Good Deeds Day"

SCE Students, alumni and faculty provided private tutoring in math to school students in Beersheba and Ashdod

As part of Good Deeds Day, which this year was held online, SCE students, alumni and faculty volunteered to provide private tutoring in math to school students in Beersheba and Ashdod.

The college contacted elementary schools in these cities to obtain a list of fifth- and sixth-graders who needed individual assistance with math during these challenging times of social distancing.

Each and every one of the volunteers contributed as much as they were able – between 1 and 4 hours of private tutoring on Zoom.

Good Deeds Day included additional online activities such as lectures, quizzes, scientific experiments, workshops, exhibitions and more.