

NEWS FOR A BETTER WORLD

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FROM THE PRESIDENT DESK



Research has proven that higher education is imperative for a better and stronger society. Each and every one of you and all of you together, with the education you are acquiring, contribute to the resilience of Israeli society, making it a better, more educated and advanced society.

We, at the College, have done and are doing all that we can to maintain the highest possible level of research and teaching excellence and hope that you are benefitting from it. The College is considered an important, significant and prestigious institution, with outstanding infrastructures. Each year we train 15% of all the country's new engineers, who find their futures in hi-tech companies in the south, as well as all over the country.

I think of you as our partners, and this partnership not only enriches the college and its graduates, but society as a whole.

I wish you all great success!

Sincerely,

Prof. Semyon Levitsky
SCE President

Making History: A School of Architecture was Launched at the Be'er Sheva Campus

A festive event marked the launching of the SCE School of Architecture, the first in the Negev and in the south in general.

SCE marked the launching of its school of architecture – the first in the country's southern region – with a festive event. The historical occasion was attended by the first cycle of students and their families, senior members of the college, staff members and many guests.

Welcoming addresses were made by two of the school's visionaries and partners to its materialization – Be'er Sheva Mayor Rubik Danilovitz and College Rector Prof. Jehuda Haddad, as well as by the head of the new school – Architect Netanel Alfasi.

"The SCE School of Architecture will provide a solution to the accelerated development of Israel's south as a region of advanced hi-tech industries and research centers", said Prof. Haddad, "This is a breakthrough for the Negev and its residents and good news for the young people of the region, who had to travel to the central and northern regions to acquire knowledge in this important field".

Be'er Sheva Mayor, Rubik Danilevitz, stated that the new school of architecture "is history in the making":



"It will train, right here in the Negev, the first course of new architects. In the new age, the next generation of architects will have to dream big and insist on realizing these dreams. Thanks to the training the school staff will award the students, and thanks to a lot of imagination and creativity, we will be able to generate the required change and turn the Negev into a national coveted region and thereby fulfil the Zionist vision of settling the Negev – which, with a little bit of creativity, can offer a solution to the national housing crisis".

"The School of Architecture in the Negev being launched today is unique on many aspects", said Arch. Alfasi. "Beginning with the curriculum, which in the spirit of the college, places the focus on the students, and to its unique location: Negev, the desert and the Be'er Sheva metropolis. These provide a new and fresh outlook based on the region's special features. As residents here for at least five years the students will get to know at first hand all of the factors that make this

region what it is".

"First and foremost, I would like to thank Prof. Jehuda Haddad – for dreaming, initiating and establishing the school", added Arch. Alfasi, "Rubik Danilevitz – for the significant support, the college team and the school staff – who are working hard to enable us to train the next generation of excellent architects, and of course – our students of the first course – for your faith in us by choosing this school".

As part of the cooperation already having been orchestrated with the French Embassy in Israel and the French Cultural Institute, an on-line lecture by French-Swiss Architect Philippe Rahm was screened at the event.

The first-degree study program, B.Arch., includes five years of study at university fees, and will award the graduates with a "tool box" for good design, building preservation, use of technological tools and extensive knowledge on sustainability and innovation.

FROM THE RECTOR DESK



SCE is continuing to grow and renew itself in a variety of fields. The college researchers win prestigious grants and prizes, new study courses have recently been launched, and we are working on the opening of additional courses that will fit the unique character of each campus. Academic conventions and environmental and social events take place as a matter of routine, attracting active researchers, social leaders and the general public.

All these and more oblige us, as an academic institution, to continue to lead in research, in professionalism and in cooperation, out of the understanding that our activities will contribute to the world becoming a better place, and provide you, our students and graduates, with a significant head start on your integration into industry and academia.

I wish you, our graduates, successful and speedy integration into the industry. I am certain that you will lead Israel's society and economy. You are the State of Israel's future generation.

I wish you great success in your new journey.

Yours,

Prof. Jehuda Haddad
Rector

SCE Signed a cooperation agreement with the UEMF University in Morocco

“The agreement will assist both institutions in deepening research, and I am certain will also be a bridge between the cultures and contribute to strengthening the peace process” said Prof. Hadad, College Rector

SCE signed a cooperation agreement with one of the leading universities in Morocco – Euromed University of Fes – UEMF. The agreement includes research collaboration and submission of research proposals to the European Union, as well as promoting exchange of students and of staff members.

The agreement was signed by UEMF President, Prof. Mustafa Busmina, and

Prof. Semyon Levitsky and Prof. Yehuda Hada from SCE.

UEMF operates in Fes, the second largest city in Morocco under the Honorary Presidency of King Mohammed the Sixth. The agreement signed is the result of a connection formed between the two academic institutions with the warming up of diplomatic relations between Israel and Morocco. These relations accelerated following the normalization

agreement signed between the countries in December 2020, and the inauguration of an Israeli embassy in Morocco.

“As peoples sharing the same geographical region of the Mediterranean basin, we share common interests”, said Prof. Hadad. “The agreement will assist both institutions in improving, expanding and deepening research, and I am certain that the warm bond formed will assist in developing interpersonal relationships



between Israeli students and staff with their colleagues in Morocco, which will be a bridge between the cultures and will contribute to strengthening the peace process and connection between the two countries”.

Designing the Babi Yar Memorial Site – A Renewed View on Monuments, Commemoration and Remembrance

A series of Zoom sessions by the new School of Architecture wishes to connect students and the general public to contemporary architecture in Israel and worldwide • The Babi Yar site, which recently made headlines, and the new synagogue constructed there, were the focus of a fascinating meeting, with the participation of central figures in designing the site.

Following the Russian attack on the Ukraine, Israeli headlines reported hits close by the Babi Yar memorial site – the place where tens of thousands of Jews were massacred during WWII.

The Architecture Department decided to use this renewed interest for a meeting between the students and some of the important figures that participated in designing the site. The zoom session, held at the architecture studio, and that was also open to the general public, hosted

Nick Axel, head of the memorial site design team; Manuel Hertz, architect of the new synagogue at Babi Yar; and Robert Jan Van Pelt, the historian who accompanied the project.

The students and the guest audience were given the rare opportunity to understand the design of one of the most important memorial sites in the world, and to receive an additional perspective of what is currently happening in the Ukraine. The building process of the impressive

synagogue that was inaugurated a year ago on the site, was reviewed in detail. The synagogue is designed like a book of Talmud, which opens up to the visitor at the site creating an extraordinary prayer hall.

The series of lectures at the new School of Architecture is headed by Dr. Gili Marin, who is in charge of visual culture at the school.

Head of the Architecture Department, Architect Netanel Alfasi said: “The new School of Architecture at SCE considers

connecting students to what is currently happening in the field of architecture in Israel and worldwide to be of great importance. As architects, we are obliged to be current, relevant and actual, and I therefore thank Dr. Gili Marin for the fascinating series of lectures she has compiled.

“The lecture on Babi Yar presented a new and refreshing angle on the essence of monuments, commemoration and memory, and brought up a discussion on the ability of the architect to influence the political and social environment in which the building ‘operates’. Commemorating the holocaust is not only about monuments that tell the story of the past, but also brings forth the opportunity for the future – like the synagogue at the Baby Yar site”.



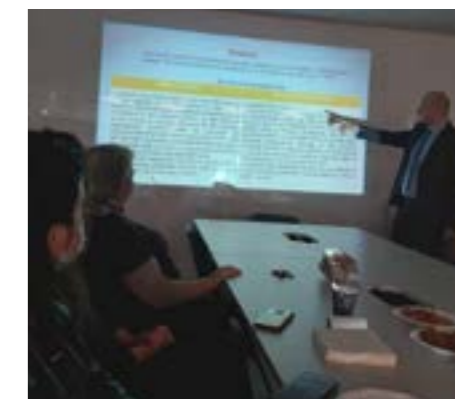
Dr. Potius Spirupolus of the West Attica University in Greece, delivered a series of lectures to the SCE students, on both of the college campuses • The lectures dealt with preventing the spreading of fake news on networks, the challenges posed by the new technologies in this field, and more.

The spreading of fake news on networks in general, and surrounding the Russian invasion of Ukraine in particular, were the focus of a series of unique lectures delivered by Dr. Potius Spirulonus from West Attica University in Greece, a lawyer and criminologist specializing in cyber-crime, at the Ashdod and Be’er Sheva campuses of the college.

In Ashdod the lectures were attended by students of the communications and cyber systems course in the Software Engineering Department. In Be’er Sheva the lectures were part of the course in “Data systems in private and society lives” being taught by Dr. Adi Katz, as part of the master degree studies in industrial and management engineering.

The students learned about different ways to prevent the spreading of fake news, about the challenges posed by new technologies including artificial intelligence and machine learning, and the laws, penalties and legal approaches taken by various countries around the world in dealing with spreaders of lies across the Internet and social media.

The lectures were fascinating and humorous, relayed through stories of



cases that depicted the tension between the right to freedom of speech and the implications of spreading lies (within political, medical and other contexts).

The course on “Data systems in private and society lives” deals with the many effects of digital technologies on people, on communities and on humanity as a whole. Engineers and scientists developing these advanced technologies had to have critical vision, and be able to understand that the technologies do not only bring solutions but also new problems and unexpected aspects. As part of the SCE concept “Engineers for a better world”, the responsibility of engineers on the implications of technological inventions is emphasized.

World Cyber and Privacy Challenges - Mobility-as-a-Service (MaaS)

Prof. Wafa Elias; Etti Berger, LLM – CEO of Triple P Consultation and Training Ltd.



Mobility-as-a-Service (MaaS) is a service concept that combines public transportation with other mobility services, such as car-pooling, transport sources and sharing bicycles. The main idea is that mediatory digital services facilitate users in planning, ordering and paying for supplementary mobility services, thereby easing life-style and making users less dependent and focused on private cars.

Use of the MaaS model is possible through many data and information technologies, such as wireless wide band, smart phones and tablets as interfaces, location-based services and smart cars, that enable 'joining' other cars. The role of data and information in this case is decisive: transport information, infrastructure data and physical transportation infrastructure will together constitute a vital platform

for mobility services.

It should be remembered that on the one hand the promise of self-driven vehicles increases ease, comfort and efficiency, while reducing driving risks. However, on the other hand making the new mobility system safer and more flexible also means dealing with an increasing variety of cyber risks and threats, as these innovations expose car manufacturers, suppliers and passengers to potential risks concerning privacy, data security and safety issues.

Cloud based computation services contain the possibility of storing user information, of delegating data management and of distributing the services of smart car companies economically. At the same time, this user model also increases concerns related to data control, data protection

and data mobility:

- Users may lose control over their resources – their personal details;
- Data protection schemes are not sufficient when data is transferred to a new cloud;
- Monitoring and controlling the changes in data location and the responsibility for action of these data are not well supported.

The initial major components of data security methodologies by the NIST organization for mobility infrastructural system analysis include:

- Identification:** know yourself, but more so know who is interested in you;
- Protection:** protect your critical services from everyone;
- Warning:** identify the "enemy" when they manage to bypass security.

Despite the many advantages of adopting

cloud computing, there are also several barriers to its adoption in matters pertaining to MaaS. One of the most significant is the subject of data security and the issues concerning obedience, privacy and regulatory issues. Whereas cloud computing represents a relatively new model of computing, there are many uncertainties concerning the manner in which security can be achieved on all levels (for example, network security, hosting environment, level of applications and data management) and how the application security is transferred to cloud computing. This uncertainty has led data managers to consistently declare that security is their first and foremost concern with cloud computing.

Therefore, the risk concerning cyber issues are perhaps the greatest threat to future mobility of autonomous vehicles,

and it can be assumed that the subjects of data interfaces, privacy and security will be of supreme importance when organizations and people begin to turn autonomous vehicles into reality. Securing the new mobility system is a deterring challenge – and high risk.

At the same time, fortunately, many of the cyber risks expected from future mobility have already been challenges dealt with in the past.

Therefore, the framework of methodologies and strategies for providing mobility services that take security and privacy problems into consideration is of the utmost importance. Privacy and data protection are core issues in all the challenges mentioned above, including the need to protect data and identity, policy components during integration and maintaining and proper level of security.

The Campus Pod is underway



A designated podcast channel for the college was launched over the past few months * You are welcome to post suggestions!

We are happy to inform that over the past few months a designated podcast channel was launched for the college called: "Campus Pod" (<https://anchor.fm/sce>)

On the channel you can listen to college staff members speaking on the subjects of economy, health, design, artificial intelligence, smart transport, etc.

You can access via the home site by clicking the icon 🎧 and listening on platforms such as Spotify, Google Podcast, public radio, etc.

You are welcome to post ideas and subjects for recording programs with your participation to the PR and Marketing Communications Department.

An end to red eyes after a swim in the pool?

Dr. Magal Sapir and Dr. Oshra Sapir developed a system for purifying pool water without using chlorine • This is an environmentally and people friendlier solution, based on the controlled release of single-value copper ions • The Innovation Authority awarded the researchers a million-shekel grant to continue the development

Dr. Magal Sapir and Dr. Oshra Sapir, two SCE researchers, have developed a unique technology that will put an end to the chlorine dangers in swimming pools. They have developed a healthier and safer way of purifying pool and jacuzzi water through the controlled release of single-value copper ions. The Innovations Authority awarded the researchers a research budget of one million shekels to continue their development of the system.

Chlorine has been in use as a disinfectant of water systems since the beginning of the 20th century, however a high concentration of

this substance can lead to severe symptoms including blurred vision, redness, skin blisters, burning of mucous membranes, coughing, chest pressure, breathing difficulties, nausea and vomiting. Chlorine irritates the respiratory system, mainly in children and elderly persons, and in its liquid form can cause skin burns.

As part of the start-up established by the two researchers – Copter Water Technologies Ltd as part of the InNegev technology incubator, they have developed a complete, healthy, cheap and environmentally friendly purification process.

Dr. Magal Sapir explains: “At a concentration of 10ppm chlorine can cause injury, and at a concentration of 800ppm it can cause death within a few minutes. Exposure to high concentrations of chlorine can cause pulmonary oedema, whereas lower concentrations weaken the lungs and cause damage to the mucous membranes in the body. The solution we are proposing is far more people and environmentally friendly and safe. The commercial potential is huge, but even more significant is our ability to propose a safer solution for the public. We thank the Innovation Authority for the research budget and

are seeking additional sources for funds. We estimate that within a year we will reach an advanced stage in developing the prototype, in preparation for serial production of the system”.

“Academic excellence alongside advanced research and development are our cornerstones”, said SCE Rector Prof. Jehuda Haddad. “The college, which is a partner in the InNegev incubator, encourages and promotes breakthrough initiatives and innovations such as the Copter Technologies venture and its two researchers”.

Selecting an Iterative Query for Guarded Search Engines with Pseudo-Relevant Feedback

Dr. Aviad Elishar, the Computer Sciences Department*

Retrieving data from search engines is one of the most common and routine actions by users. Many of the search engines available on the Internet, including on social media, are built in the form of a black box. This means that relevant information can be retrieved from these search engines by giving short queries, comprised of several key words. At the same time, retrieving all the posts and responses related to a certain article, automatically on large scale is very challenging.

In an article recently published in the Expert Systems Application journal, ranked Q1 (highest rank) an innovative method was proposed of creating complex queries using several short key words, given a certain targeted document.

The IQS algorithm connects to the black-box type search engine iteratively (step after step) improving the queries while maximizing the number of relevant documents retrieved.

The proposed algorithm was tested on Twitter TREC Microblog 2012 and on TREC-COVID 2019, showing its superiority compared to leading algorithms in the field.

In addition, use was made of this algorithm to automatically collect on a large scale, relevant data for 70,000 true and false source articles.

The data that is published and available to all includes over 22 million Twitter accounts and 61 million tweets. The vitality of the dataset collected was sampled on an automatic identification task of fake news, achieving maximum performance.

*This research was performed in complete collaboration with doctoral student Maor Reuven and Dr. Rami Pozis of the Data and Software Systems Engineering Department at the Ben Gurion University.





Sleep: A 21st century luxury or the most important of all?

Dr. Julia Penso, a lecturer and researcher in the Chemical Engineering Department, Ashdod Campus.

Deep down inside our brain, at eye level, lies a very small gland known as the Pineal gland. The gland is also known by its 'pet-name' "the Third Eye". The third eye depicts a mystical organ attributed with telepathic, intuitive and visionary abilities. In the 17th century, French philosopher Renee Descartes referred to the gland as "the seat of the soul".

The pineal gland is the restart button, that restarts this wonderful machine – our bodies. That is where the clock that

defines our 24-hour rhythm resides. Even if we lose our wrist watch, our brain will know exactly what time it is. The brain does not need an alarm clock: thanks to the inner biological clock it is well synchronized with the environment. The biological clock allows our body to adapt to the various stages of day and night, including controlling waking and sleeping cycles, blood pressure, body temperature and the release of various hormones to the bloodstream. When the inner biological clock and the outer environment are not adjusted to each other, for example when we fly to distant

time zones, we experience jet-lag and have difficulty in functioning. Prolonged disturbances to synchronicity may affect our health, which is what often happens to people working shifts.

So, what happens there inside the gland, and who is our "clockmaker"? Responsible for moving the dials is the hormone melatonin, which is produced by the pineal gland. During daylight hours, light waves reach the "third eye" and prevent the manufacture of melatonin. When night falls, the pineal gland is released from this prevention and goes into melatonin manufacture

mode, which will cause us to fall asleep. This is the source of the other names given to this hormone – the darkness hormone, the sleep hormone. When the sun shines, the level of melatonin drops and we wake up. In other words: when there is no manufacture of melatonin, we won't fall asleep, and vice versa.

These two actions – maintaining the biological clock and our ability to sleep are so important for our health, that we could easily stop at that. But no way, because melatonin has many more functions, and we keep on hearing about new and exciting studies being published

on this subject. The new information does not cease to surprise and astound us.

Well then, what else does this hormone do for us?

Melatonin is the strongest self-derived antioxidant. It has proven anti-cancer activities that are shown in countless studies. It is anti-infection, invigorates and reinforces our immune system, and recent studies recommend using melatonin treatment in support of Covid patients.

Melatonin is involved in our metabolism and encourages the production of growth

hormone. It also promotes the renewal, rehabilitation and healing of the nervous system. Your brain likes to sleep – and not only the brain. We all know the saying "Sleep Heals". This saying is based on extensive scientific basis. All healing processes and repair damage occur during sleep, with the direct intervention of melatonin.

Unfortunately, the quantity of melatonin we produce decreases as we and our pineal gland grow older. That is why we begin to wake up early and one of the reasons for the weakening of the immune system with age, as well as for the appearance of autoimmune diseases, cancer and diseases associated with aging of the brain, such as Alzheimer and Parkinson. The formula is quite simple: less sleep, less melatonin, less melatonin, more illness!

It is even more unfortunate when young people, in whom the ability to produce melatonin naturally still exists, do not allow themselves the "luxury" of sleep. We live in a world deprived of sleep. Young people tend to underrate the importance of sufficient sleep and even take pride in being able to function long hours on very little sleep. This is a fundamental mistake, which has far-reaching implications. Not only are they not producing the melatonin that protects them on a variety of fronts, but the absence of sufficient sleep increases the level of stress hormones, such as cortisol, which are known to kill brain cells in the memory and mood center of the brain – the hippocampus.

For as long as the pineal gland is on our side and producing a good quantity of melatonin, we remain young and healthy. You are welcome to sleep on it!



Opening the spring semester



Thousands of students from the Be'er Sheva and Ashdod college campuses celebrated the opening of the spring semester at a colorful and joyful happening



Thousands of students from the Be'er Sheva campus celebrated the beginning of the spring semester with a colorful and joyful happening, organized by the campus student's union. The highlight of the event was an appearance by Liran Danino on the central stage, singing all of his greatest hits, while the Ashdod campus enjoyed a special appearance by Oshri Cohen as DJ.

The participants delighted in the balmy ambience – not only because of the pleasing weather that greeted the celebrants, but also thanks to the music to which thousands danced forming a wonderful garden party, with food and drink stations and game booths.

Laying the foundations of love: A couple that met while studying civil engineering

Eli and Liran Ben Shoshan met during the preparatory course preceding civil engineering studies at the Ashdod campus * In a joint interview they speak about how group learning turned into a romantic relationship, what were the advantages of learning as a couple, and why they will probably never work together

During the digital age, where almost everyone meets through applications, classic love stories are becoming less common – those that emerge at unexpected places and create special challenges. We therefore decided to tell one of those kind of stories – a love story of a couple of civil engineers, who, even while busy with drawings, calculations and formulae, found the way to create a beautiful love story.

Let me introduce Eli and Liran Ben Shoshan, civil engineers, graduates of SCE.

Had it not been for studies at the college, the life paths of Eli, a resident of Ashdod and Liran, who comes from Binyamina, may never have crossed. “We met at a preparatory course for engineering at the Ashdod campus”, recounts Eli. “This type of meeting does not necessarily create an immediate bond. The course is attended by students interested in engineering, but not always knowing what to specialize in. You come with an open mind, and understand that some of the people you meet won’t be with you later during studies”.

The pair took advantage of the preparatory course to get to know each other better, “It wasn’t love at first sight, but feelings that grew. We started studying together, with other students we became friendly with as a group. At some point, Eli made the first move”, says Liran.

Eli tells of how the group connection turned into a couple relationship: “Being that Liran came from a distant town, the contacts she made were important for her acclimatizing to Ashdod. We began to spend time together with other friends, on assignments, during our free time, and the relationship deepened – from study-buddies to the understanding that there was something more. I felt this should be pursued and asked her out on a date”.

The challenge of studying together

With the conclusion of the preparatory course, and after both has passed the entry threshold to college, it was time to choose a specialization. “We both decided to study civil engineering, which interested us and we were



partners – as a couple and in studies”, says Eli.

The four years during which they studied together, in addition to the advantages, presented unique challenges. “During our studies we did everything together: we took the same courses, the same timetable, having a common language made it easier for us and created a joint motivation to succeed, encouraging us to achieve better results. At the same time, there were feelings that at some time we would need some sort of separation”, Liran remembers.

Eli adds: “The joint studies were convenient for a couple relationship. Engineering studies are very demanding and require extensive effort. When you study together there are always periods when one partner ‘disappears’ into learning. We each knew what the other was going through and we were by each other’s side and found time to be a couple even during intensive times. And intensive it definitely was, we were together 24/7”.

Life after graduation

Six months after graduating cum laude and five years after their first meeting, Liran and Eli got married. They have since established a home and family and are now parents to a beautiful little girl. Professionally they have both found work in their field and are influencing large projects for different companies. And no, they have no intention of working together.

“Each of us has chosen a field of specialization that interests us, with the clear understanding that it is better to choose different things. That is what urged us to decide that we prefer working for different companies”, Eli explains. Liran laughs and added: “There is no way we will work together. Learning together was a record, working like that will be too difficult”.

Eli works as the chief engineer and quality control manager for the Ramot Eichut company. He is in charge of the performance control on mega projects constructing public buildings, offices and so on, the estimated cost of which is around 500 million to two billion shekels. Liran is a project manager for Phi Engineering and focuses on the design phases from the beginning of planning and until receipt of the building permits and construction commencement. The projects received by the company are from the largest entrepreneurial companies in Israel.

“Combining our specializations, we can perform a complete civil engineering project – from the design phase until end finish”, says Eli with a smile.

A One-Man Support Center

After completing his studies in software engineering at SCE and accepting a job in hi-tech, Yochai Timsut took on a unique mission: he volunteers in giving private lessons to college students and in guiding them on their way to fulfilling their professional dreams

It seems that everyone today is dreaming of a job in hi-tech, and the demand for workers in this field is high. At the same time, candidates discover that entrance to the field is subject to extensive knowledge and diplomas proving their abilities. Candidates are required to delve into the study materials to impress their recruiters, and there is someone assisting them: Yochai Timsut, an SCE graduate, provides private lessons free of charge to those dreaming to succeed in hi-tech.

Since graduating from the Ashdod campus cum laude, Yochai has been working as a data engineer for the Reali Israel start-up company, which sells real estate via the Internet. “I am part of a data team that develops the technological platforms enabling customers to purchase homes via the Internet. I take the data and analyse it, so that whenever a new house or apartment is offered for sale on the Internet – they can be seen directly through our site”, says Yochai.

Yochai, age 29, grew up in Ashdod. “Even as a small child I was interested in the world of technology and computers”, he says, “usually on the hardware and not the software side. But when the time came to choose a field of study, I began looking into the field of software engineering. I realized it was very connected to the world I knew and had always loved, but would also challenge me on many and varied aspects”.

Yochai chose SCE following recommendations both on the level of learning and the assistance in finding work upon completion. “My cousin studied at the college and highly recommended it. She said that the learning level was high and that the recruitment rate to good jobs was very good. And indeed, it was a wonderful learning experience. The lecturers invest everything they have. And not only in the contents,



but in the ability to develop skills. I learned how to learn, how to approach problems and challenges and how to cope. I gained experience for life and for a career, which I am not sure I would have gotten elsewhere”.

“Taking the Privilege and the Tools”

After completing his studies as dean cum laude, Yochai realized that many students would appreciate assistance in learning. He decided this was his mission – to help students dreaming of the same course as his. “It is a difficult and competitive course, and I had the privilege of concluding it successfully. I am taking that privilege and the tools I received and am trying to pass them on to as many people as I can. I know what it is like to contend with graduate studies, I was in the same place only a few years ago. I provide private lessons voluntarily during studies and during the work search process, I guide them how to look for work, how to write a CV and how to conduct themselves during work interviews”.

And he does all this alongside working for a company appraised at a billion dollars, to which he was recruited just last year, but already feels he has accomplished a lot. “The start-up and the team deal with interesting and important things. We also have a great responsibility, because each has a significant role in the company’s development. In a start-up you do not feel like a cog in the wheel – you have the ability to influence and make a difference in a big way”.



Inspiring Women Beyond the Visual Image

In honor of International Women's Day, students in the Visual Communications Department honored inspiring women and made creations that tell their stories

Every year International Women's Day shines a spotlight on inspiring women. A family member, a close neighbor, a friend or a public figure – all, in their various activities, can be inspiring and serve as

role models and sources of strength for others, on their journey to achieve their goals and make a difference. Students from the Visual Communications Department honored these women through a variety of visual images.

The works were prepared as part of the Introduction to Graphic Design course. The students were asked to research a famous female figure and then to design a visual image positioning it on the background of her story, as it appeared to them. Each student selected a well-known figure from local culture or society presenting her visually – by illustration or

collage, as reflected through their eyes and based on what her achievements conjured up.

"Women's Day is a reminder of women's actions and multiple tasks they fulfil. Women broke through the barriers of home a long time ago and fill a variety of positions. Women fill key positions and hold powerful jobs", says Inbal Gray, the course instructor.

Inbal explains that despite the huge change and women's integration into so many areas over the years, we, as a society, still can improve and aspire. "Women are strong and worthy of

respect just like men. Every woman, no matter where she is in society, can inspire, and presenting her visually, as perceived by the beholder, can elicit sensations in viewers that will lead to activities that promote society".

Among the works submitted we have chosen to mention the one by Daniel Hajaj, a first-year student in the new Visual Communication Department, who selected to create a visual image of Ronni Zuckerman, Israel's first female fighter pilot. "As a former Air Force soldier, I felt affinity to Ronni's story. As far as I am concerned, she is as inspiring as a super-hero, having paved the way for other women. In the image I created I wanted to express that thought, of Ronni as a super-hero with a double life: on the one hand a tough fighter pilot, and on the other – Ronni the civilian, who has friends and who loves to have fun. That is why there are two half faces which together are Ronni. The fact that there are no photographs of her made the assignment even more interesting, because of the mystery surrounding her. The image covers what appear to be two pages, with the thought that a person seeing the first page will read 'First Fighter Pilot' and when seeing both pages will discover that it is in fact the 'First Female Fighter Pilot'.

The introduction course to graphic design is supposed to award the students with the tools and skills to connect between image and text and determine their relationship. Through workshops and theoretical studies, the course introduces basic concepts such as image, icon, symbol, etc. Students get to know how reality is mediated through design. For example, how design uses nostalgia, yearnings, how to make a product, figure or narrative attractive, thereby fulfilling the intentions of the image creator.

Homage to Movements in Art

An exhibition of works by the Visual Communications Department students, in homage to the various art movements, decorated the main roads of Be'er Sheva in bright colors • The new department will continue to enrich urban culture over the coming years!

A collaboration between SCE and the Be'er Sheva Municipality led to the positioning of colorful banners along main roads in the city, made by the college visual communication students. All the works were made as part of the Form Development course, in homage to the various art movements in history.

The course provided the students with tools for formative description to illustrate an idea and to enrich visual language. They learned how the medium of printing can express various practices such as painting, sketching, patterns, paper cuts, color and composition enabling the creation of an image for an industrial object, combining tradition with progress.

The course instructor, Einat Amir, said that the exhibition is comprised of final works by students in the course, that combine the practical tools provided and the theoretical classes taught during the semester, including 'Introduction to the History of Art and Design'. Students were asked to select one of the art movements, to study it in-depth with the objective of creating a visual expression that can be made into an artifact, such as paper products, take-away or fashion.

Einat Drezner, a first-year student in the visual communications department, was happy to see her work displayed on David Toviya Street, close to the train engine site. "I am very pleased with the result and am proud of my work. It is fun to see it displayed on the city streets and to know that other people will see it. During the semester I made my first acquaintance with the prolific world of ancient Egyptian



imagery, and in my work, I created stamps based on the visual language and the culture of the period. The objective was to create a visual image that speaks the language of ancient Egypt, but would be a basis for future use in fashion, such as for creating 'Egyptian' style pyjamas suitable for boys and girls.

Students whose works are displayed in the outdoor exhibition started studying at the college visual communications department only this year. The department's objective is to cultivate young designers with technological and design know-how, with a vision, flexible thinking and personal motivation for visual expression. Studies are based on deep understanding of the designer's role in the rapidly developing and changing age of technology and science. During their studies the students will develop visual erudition, interactive design thinking and get to know the various digital platforms.

The residents of Be'er Sheva and its guests will benefit from the students' works, which will continue to color and enrich the city's urban culture over the coming years.

Chemical Engineering that Promotes Excellence

In order to encourage academic excellence and academia-industry relations, the “Adama” company continues to award excellence scholarships to students of the chemical engineering department on the Be’er Sheva campus • At the end of a fascinating tour of the department’s research laboratories for the company officials, scholarships were awarded to six outstanding students • “We will continue marching the world forward together” said Zvi Manor, Adama’s COO

On March 23, 2022 the Be’er Sheva campus held its traditional Adama company scholarship awards ceremony for outstanding students of the chemical engineering department, in their 3rd and 4th years of study.

This year, for the first time, a scholarship was awarded to a second-degree student of the department, in respect and promotion of its research and researchers. The chemical engineering department was the first department in all of Israel’s colleges to receive approval for second degree studies with a thesis, and there are currently second-degree students with a thesis in green engineering.

The scholarship recipients this year are Ron Peretz, Coral Monsongo, Hila Beckman, Eva Ben Hamo, Ravid Eliav and Eliraz Stemaker.

The scholarship award ceremony is dedicated to the Adama company (formerly Agan and Makhteshim) founders, four entrepreneurs and pioneers: Zvi Manor, Micha Pikarsky, Israel Tamir and Eliyahu Teumim. The scholarships were presented to the outstanding students by Zvi Manor, Adama’s COO, Prof. Simon Levitzky, SCE President, and Prof. Ariella Berg, head of the chemical engineering department and of second-degree green engineering.

Manor congratulated the winners saying: “You have chosen the right profession! Chemistry is everything – with this

profession you can aspire to go far. Your fields of research are the future of our sector as well – agriculture, and we believe that together, you in research and we in industry, will continue to march the world forward. Adama regards our relationship with the SCE chemical engineering department to be of great importance, and we promise to continue our fruitful cooperation, with the objective of ‘creating’ leading engineers, such as yourselves.

Prof. Levitzky: “We appreciate Adama for exposing our students to the industry, to advanced technologies and to gaining experience in interesting and important work. Many of our graduates have already been absorbed into the company, representing the college honorably. We value the company’s involvement in training the graduates and hope our cooperation will continue”.

Professor Berg: “At the chemical engineering department, we have made it our purpose to train graduates with original and independent thinking and the ability to lead, thereby reinforcing the relationship between industry and academia. This relationship is very important because of the focal position chemical industries play in Israel’s economy. We regard Adama Makhteshim as principal partners in the training and success of the department students, and thank them for the scholarships, that contribute toward these impressive

achievements. Congratulations to the outstanding students – not only for their excellent achievements, but for their social and community activities, which prove that academic excellence can be combined with giving to the community”.

Ron Peretz, a third-year student: “The fact that we have been selected as exceptional students by two leading entities is for us a ‘motivational push’. Recognition of our learning and social achievements is exciting and encourages us to continue to invest and maintain the high bar we have raised for ourselves, on the way to becoming excellent engineers and to integrating into industry and research. On behalf of myself and my colleagues, I would like to thank Adama for the scholarship, which enables us to concentrate on our studies, and prove we are worthy of the title “outstanding” and serve as a model for others”.

Tour of the laboratories

Before the ceremony Adama officials, together with some of the company employees, graduates of the department (Shlomi, Yamit, Igor and Gal) toured the various laboratories and heard from the students on their researches. Many interfacing points were found between the research as part of green engineering studies on the environment and sustainability, and the ongoing research at Adama for agricultural requirements in consideration of their environments.



The tour began at Dr. Yoram Shotland’s laboratory, where three second degree students presented their research subjects:

Nail Asad is monitoring antibiotic activity of Khat plant extracts, which was a traditional medicine used by Yemenite Jews to treat problems in the digestive and respiratory systems. Nail found that the Khat plant extracts effectively prevent the growth of bacteria, which may pave the way to developing antibiotic medicines based on the plant.

Maram Osman is researching using bio informative and laboratory instruments, bacteria that affect the Cucurbitaceae family, and particularly watermelons and melons. The research is designed to identify primary genes in the pathogenic process and to understand their function.

Damian Alejandro Kischinovsky is researching a primary protein required to create secondary substances in plants, that are of great important to the food and drug industries. The research is designed to enable the building of a system that can manufacture these substances in yeast or bacteria, thereby using biotechnological means to produce large quantities of these valuable substances.

The tour continued to the center for green processes, where student Shir Shai, mentored by Prof. Adi Wolfson and Dr. Ohrat Untman, presented research centered on hydrogels based on renewing polysaccharides from biological sources, in order to absorb ions of the lanthanoid family from water solutions. The results of the research may lead to the development of a cheap

and environmentally friendly method (minimizing chemical waste, reusing a biological absorbent and possible reusing metals) for treating water solution sewage.

The student Reut Amar, mentored by Prof. Dorit Tavior and Dr. Isaac Ledijansky, is examining the effects of micro-drops on chemical reactions and finding optimal conditions for performing the various reactions. The research results may assist in accelerating chemical reactions.

In the biotechnology laboratory student Yogev Yehezkel, mentored by Dr. Ina Levitzky, Dr. Rafi Gonen and Prof. Ariella Berg, presented his thesis dealing with developing a fast method for identifying damage as a result of exposure to radioactive radiation.

The tour ended at the department’s teaching laboratories, which are equipped with advanced instruments that serve the students during their first-degree studies. Prof. Dorit Tavor spoke about the unique equipment, which include semi-industrial (pilot) systems that were built to designs by the department for learning and applying the foundational activities taught in the various courses: flow, the passage of movement, of heat, refining, filtering, etc.

Eyes in the Skies: A visit to the Rakia Mission Site

Students from the electronics and electrical engineering department specializing in satellites and space, visited the Rakia Mission site and learned about Eitan Stibbe’s mission at the international space station, about communicating with the station and living conditions aboard.



Students from the electronic and electrical engineering department specializing in the satellites and space program of the Ashdod campus department, visited the Rakia Mission site, which conducted the mission of Israeli Astronaut Eitan Stibbe in the international space station. The visit was organized by Uri On, a lecturer in the specialization program, together with the head of the Electronics and Electrical Engineering Department, Dr. Irit Yuviler and the department team. The students were given explanations on the mission control room, on communications with the space station and the astronaut, on the living conditions in the space station, and on the Israeli experiments being conducted at the international space station. Apparently, in preparation for Rakia Mission a competition was held between Israeli scientists and researchers, and 35 unique experiments were selected, in various fields, that are being conducted at the

space station under micro-gravitational conditions. This is a record number of experiments for a single space mission. The satellite and space specialization program commenced on the Ashdod campus four years ago, and ever since the number of students has been increasing annually. This year an extension of activities and a budget for the construction of a special laboratory with a clean room were approved, in order to build and launch a nano-satellite, which the students have already begun to design. Students joining the program over the coming years will continue the project and will be able to choose the nano-satellite as

their final project. The nano-satellite project is being managed by Uri On, and together with Dr. Daniel Portnoy, an experienced systems engineer who was recruited in favor of the matter, is mentoring the students. The field of space is being revolutionized with new technologies, new business models and many start-up companies being established in Israel and worldwide. The electronics and electrical engineering department on the Ashdod campus regards the exposure of students to this developing field and the training of engineers for this work to be of great importance.

ACADEMIC STAFF



Dr. Isaac August

A member of the academic staff in the Electronics and Electrical Engineering Department and the Physics Unit. Be'er Sheva Campus

I was born on January 1, 1978 – and I am privileged to be the first child born in Be'er Sheva that year! During a new year's eve party, my late grandfather, Motke, who at the time was the owner of the Whitman Club, was treating everyone to free drinks to celebrate having beaten the Germans.

“They did not succeed!” he shouted, meaning of course, the Nazis.

I was born and raised in Be'er Sheva and since kindergarten have been interesting in nature and its wonders. My late father used to bring me magnets, coils, engines and various gages and would explain how they worked. At elementary school I won some prizes, including first prize in the Negev district electricity competition, where I presented a high-tension generator.

I studied for a BA in physics and for an MA and doctorate in electro-optic and photonic engineering – all at the Ben Gurion University. I completed my MA studies summa cum laude, during which I published articles and participated in scientific conventions and even presented my work to the European space agency (ESA) in Italy. During my doctorate studies I published a number of academic articles, including in the prestigious Scientific Reports journal published by Nature, and won several scholarships for competitive excellence. I presented the results of my scientific work at many conventions in the USA, Europe and Israel. Another significant achievement from my doctorate studies was the registration of a patent in the USA,

Europe and Israel for an advanced spectral imaging technology. This technology is currently under commercialization process by several companies. During my doctorate studies I was invited as a guest scientist at MIT and participated in a breakthrough scientific research. After completing my studies, I performed two post-doctorate advanced studies.

In October 2019 I was appointed as part of the senior staff with rank of professor in the electrical engineering department and the physics unit. In December 2021 we launched the center for advanced research in calculative optics, which I run. The principal activity of the center is the substantial improvement of ultra/hyper-spectral imaging systems and polarimetric imaging systems. The center invites students to learn about the immense potential of calculative imaging.

I would like to praise the advantage of studying at the college – the intimacy it provides, the personal regard for each student and the informal approach.

I live in Beer Sheba, I am father to two children, the older of which (Moshiko) some of the students have met. At his young age he already loves visiting the college!

ADMINISTRATIVE STAFF



Liran Falik Tevet

Manager of the unit for business development and commercializing knowledge.

I started working for the college in February 2020, with the objective of establishing the business development unit. My professional experience includes strategic consultation and the establishment and management of two start-up companies.

I studied for a first degree in industrial design at the Shenkar College and for a second degree in industrial design specializing in design management (alongside a second degree in business management) at the Bezalel Academy of Art and Design in Jerusalem. The combination of design thinking and business management gave me the unique ability to observe how businesses are established and companies built. The ability to combine technology with user understanding allows observation of the

business world through the vision of the end user and to better understand how to construct the value chain in order to achieve goals and improve profitability, without injury to the user experience.

Today the business development unit operates with a combination of multiple incubators and private investors, with active investments. Its objective is to find the balance between basic research promoted by academic researchers, and the application phase, that enables the establishment of start-up companies from within the college and promote breakthrough technological ideas – on both academic and business levels.

I am mother to three children and live in Tel Aviv. Happy to work in the southern region and to promote technologies towards realization in business.

Doing Good for the Environment

As part of the Good Deeds Day, members of the Green Cell at the Be'er Sheva campus held a clean-up day at the Dudaim forest, to benefit visitors.

In the spirit of ongoing annual activities, members of the Green Cell at the Be'er Sheva campus decided to focus the activities of Good Deeds Day on something special for the environment. After contacting the JNF, they realized that huge quantities of trash are spread around the Dudaim forest, situated between the Ramot neighborhood and Lehavim, and that there are no regular clean-up activities there. Together with other students, the cell members collected the trash and cleaned up the forest – to benefit visitors.

This activity is added to the variety of



activities operated by the Green Cell, with the objective of increasing awareness to various sustainability issues. Thanks to the cell, recycling areas have been established at the college and throughout the year various activities are held, that encourage students to preserve the environment. Among others, an ecological garden was established on the Be'er Sheva campus, maintained by students from all the departments. The garden has seating areas, benches, trees and tea plants. A vintage fair for students and staff encourages the purchase of

used clothes, to prevent injury to the environment from the clothing industry and from clothes being thrown away.

Sapir Asayag, leader of the Green Cell on the Be'er Sheva campus: "We are happy to participate in any environmental activity to which we can contribute. The objective of these activities is of course environmental preservation, but also to connect the community to its environment and itself through special initiatives, that emphasize how simple it is to make a difference to the environment".

Opening the Doors to the World of Engineering

A new program by SCE and the Education Ministry offers engineering studies to outstanding junior high school students from Ashdod and its surroundings.

The Ashdod campus hosted an experiential meeting for scores of outstanding pupils from the Ashdod, Gedera and Kiryat Malachi junior high schools. The meeting was designed to introduce a new program initiated by the college together with the Ministry of Education, within which outstanding students in the fields of mathematics and sciences will participate in academic courses of the electronics and electrical engineering and the mechanical engineering departments

at the college, and will collect credits towards a first-degree.

During the course of exposing the program the pupils enjoyed special enrichment lectures, toured the campus workshops and research laboratories. They were joined during the day by College Rector Prof. Jehuda Haddad, Education Ministry VP Mohana Fares, the Higher Technological Education Commissioner, Josef Menuhin, the Electricity Program Supervisor, Irena

Liberman, the college staff, the pupils' teachers and parents.

Prof. Jehuda Haddad: "To be exposed to the fields of engineering at such a young age is very important. A pupil showing an interest in the field will aspire, invest and succeed in learning, and will earn a better starting point when the time comes to choose an academic and professional path. The program is part of long-term thinking to encourage consideration of engineering and hi-tech from a young age".



Giving back to the Community: The Ashdod Campus Students Union on Good Deeds Day



Members of the Ashdod campus Students Union decided to renovate the community center entrance in the B Quarter of the city, which provides services and support to special needs persons.

Visitors to the B Quarter Community Center in Ashdod city may find it difficult to recognize the place: the entrance, which had been neglected for many years, received an overnight upgrade and was given a new and shiny appearance. The welcome change is the result of an activity initiated and performed by members of the Ashdod campus student's union, as part of the Good Deeds Day activities. Members of the union arrived at the center, which is attended on a daily basis by children and adults with special needs. They repaired and painted the walls of the center, and installed synthetic grass and garden

planters on both sides of the area. Activity was ongoing when the children arrived at the center, and they joined the students in this happy and gratifying event.

Or Elmakais, chairman of the student's union on the Ashdod campus: "As students studying in Ashdod, we feel it is very important to connect to the surrounding community. We were happy to participate in the activities of Good Deeds Day and to make a welcoming and cared for entrance to the community center that supports persons with impairments. We promise to keep in touch with additional activities that we will perform during the year".

