



CANADIAN UNIVERSITY DUBAI

Your portal to Canadian education

Faculty of Engineering, Applied Science and Technology

NEWSLETTER - 2020

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Message from the Dean

We are excited to launch our first Newsletter! We plan to have two issues per year for the Fall and Spring semesters. The purpose of this Newsletter is to share our past achievements and future plans as well as introduce and showcase our internationally renowned and award-winning faculty. We hope you enjoy getting to know the Faculty of Engineering, Applied Science and Technology as much as we enjoy offering it to you.

The Faculty of Engineering, Applied Science and Technology is experiencing an exciting growth period, beside our flagship Bachelor of Computer Network Engineering Technology program. In 2018 we launched our Electrical Engineering program with three majors in Mechatronics, Electronics, and Telecommunications. These programs have attracted a good number of students. Currently, we are preparing to add one new major to the Electrical Engineering program in Power and Sustainable Energy to meet the increasing demand for skilled graduates in this domain. Additionally, we are collaborating with the School of Computing at Queen's University in Canada to Launch our new B. Sc. in Computing for the academic year 2021/2020.

"As engineers, we are going to be in a position to change the world - not just study it."

Henry Petroski
Engineer

FACULTY OF ENGINEERING,
APPLIED SCIENCE AND TECHNOLOGY

Bachelor of Science in
Electrical Engineering,
Telecommunication



INSPIRING MINDS
TRANSFORMING LIVES

FACULTY OF ENGINEERING,
APPLIED SCIENCE AND TECHNOLOGY

Bachelor of Science in
Electrical Engineering,
Electronics



INSPIRING MINDS
TRANSFORMING LIVES

"Scientists study the world as it is; engineers create the world that has never been."

Theodore von Karman
Mathematician, Aerospace Engineer, and Physicist

FACULTY OF ENGINEERING,
APPLIED SCIENCE AND TECHNOLOGY

Bachelor of Science in
Electrical Engineering,
Mechatronics



INSPIRING MINDS
TRANSFORMING LIVES

"Science can amuse and fascinate us all, but it is engineering that changes the world."

Isaac Asimov
Writer, Professor of Biochemistry

INSPIRING MINDS
TRANSFORMING LIVES

FACULTY OF ENGINEERING,
APPLIED SCIENCE AND TECHNOLOGY

Bachelor of Computer and
Networking Engineering
Technology



INSPIRING MINDS
TRANSFORMING LIVES

"The walls between art and engineering exist only in our minds."

Theo Jansen
Founder of Microsoft

INSPIRING MINDS
TRANSFORMING LIVES

Faculty of Engineering is working hard toward CUD's strategic direction to integrate innovative and entrepreneurial activities throughout the curriculum and to equip our graduates with the skills to succeed and become tomorrow's leaders. We provide quality education through teaching and research excellence, a vibrant educational environment, and innovative programs. For example, in 2020 our engineering students shined in many local and regional competitions with the help of their faculty members. These students' accomplishments will be highlighted in this publication.

Finally, I invite you to visit our website, <https://www.cud.ac.ae/faculties-and-departments/engineering-applied-science-and-technology>, regularly, which gives detailed information about our programs and research and our most recent news and activities. I also personally welcome potential candidates to our campus to visit our laboratories and meet professors, staff and students.

Dr. Sherif Moussa

Acting Dean

Faculty of Engineering, Applied Science and Technology



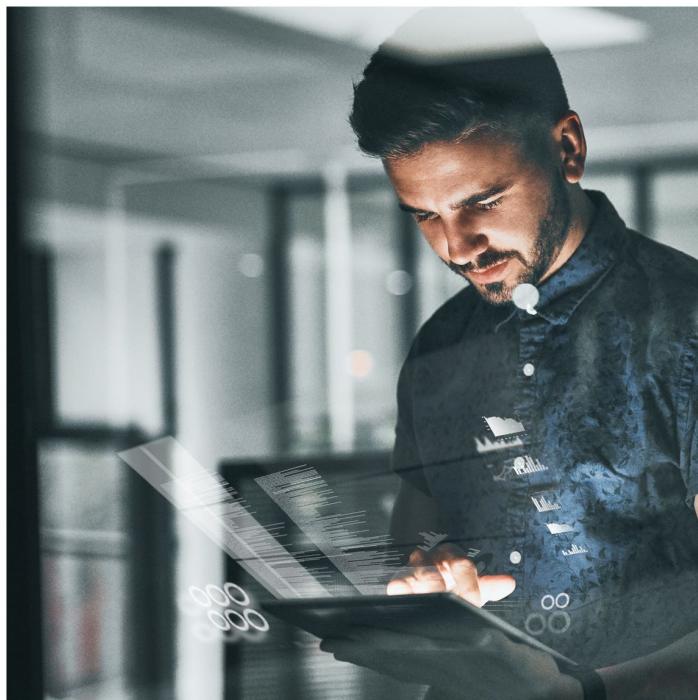
Introduction to Bachelor of Science in Computing

We designed our Bachelor of Science in Computing in collaboration with Queen's University, Ontario, Canada, to provide students with a solid Computer Science and Computing Mathematics foundation. Students will gain the fundamental skills needed to become accomplished theoretical computer scientists, data miners, and data scientists - skills currently in high demand. The mathematical knowledge gained through this program will also provide graduates with a significant edge over the competition for research-oriented positions in high-tech industries.

NEW PROGRAMS

Bachelor of Science in Computing Biomedical

Our Bachelor of Science in Biomedical Computing has been designed in collaboration with Queen's University, Ontario, Canada, and is a specialized program that combines the diagnostics and investigative aspects of biology and medical science with computing capabilities and combinatorial algorithms. Graduates will be able to analyze biomedical data, computational modelling of biological systems, and the development of computer software systems. Knowledge and skill in these areas assist physicians and specialized doctors in producing and administering more accurate treatments to patients and may provide smart Decision-Support-Systems for the doctors.



Bachelor of Science in Computing Cyber Security

The Bachelor of Science in Computing – Cyber Security program will prepare students for careers in the network security industry. The curriculum includes combined core topics in the realm of computing and cybersecurity, such as computer systems, network and computer forensics, system and network security, ethical hacking, applied offensive and defensive security, and human and organizational security. Students will learn best practices for the design of secure modern networks and software systems and advanced techniques for security engineering, digital forensics, applied offensive and defensive security and applied cryptography. Students will learn about evolving threats and the proper use of specific security tools. Both security theory and hands-on practice are stressed and emphasized in this program.

Bachelor of Science in Computing Software Design

Our Bachelor of Science in Biomedical Computing has been designed in collaboration with Queen's University, Ontario, Canada, and is a specialized program that combines the diagnostics and investigative aspects of biology and medical science with computing capabilities and combinatorial algorithms. Graduates will be able to analyze biomedical data, computational modelling of biological systems, and the development of computer software systems. Knowledge and skill in these areas assist physicians and specialized doctors in producing and administering more accurate treatments to patients and may provide smart Decision-Support-Systems for the doctors.

A list of career opportunities offered from these programs include:

- IT Manager
- Systems Analyst
- Cyber Security Engineer
- Security Architect
- Software/ Hardware Analysis
- Robotics
- Software Design
- Web Development





FACULTY SPOTLIGHT



Dr. Ahmed Al Gindy

Assistant Professor, Faculty of Engineering,
Applied Science and Technology

Dr. Al-Gindy Holds a Ph. D. in Electrical and Communication Engineering from Faculty of Engineering and Informatics, University of Bradford, United Kingdom. He also obtained his Master of Philosophy degree from Faculty of Engineering and Informatics University of Bradford United Kingdom and a Bachelor of Engineering in Electrical and Computer Engineering from Faculty of Engineering & Technology, Maritime Academy for Science & Technology, Alexandria Egypt. Dr. Al-Gindy is a certified academic program assessor in the association of Arab Universities. He is certified in Business Process Management and Improvements, from George Washington University, USA. Dr. Al-Gindy has developed several curriculum and instruction manuals in Engineering and Computing Technologies. His research interests cover design of various signal and image processing algorithms, RFID technologies and Artificial Intelligence.



Dr. Rita Zgheib

Assistant Professor of Computer Engineering,
Faculty of Engineering, Applied Science and Technology

Dr. Zgheib (Dr. Rita) holds a Ph. D. in Computer Engineering specializing in artificial intelligence from the University of Toulouse 3 Paul Sabatier, Toulouse, France in 2017. She also obtained an M. Sc. Computer Engineering specializing in Information and communication systems from the University of Toulouse, France, in 2014 and a B. Sc. in Computer Engineering from the Lebanese University - Faculty of Sciences, Fanar, Lebanon in 2012. Prior to joining CUD, Dr. Zgheib was a Research and Teaching Assistant at the University of Pau and Adour Countries, Anglet, France. She also worked as a Research and Teaching Assistant at the School of Engineering, Information Systems for Healthcare (ISIS), Castres, France. Dr. Zgheib's research interests are in IoT solutions, middleware, ontologies, healthcare applications, and software engineering, specifically focusing on providing semantic middleware solutions for improving healthcare.

Cloud Practitioner Workshop and Introductory Course

Dr. Rita Zgheib, Faculty of Engineering, Applied Science and Technology, organized a workshop on Amazon Web Services (AWS) Cloud Computing in January 2020. This workshop included an introductory course and preparation for the cloud practitioner certification from AWS. The workshop objective is to help our students to explore and grow in the booming field of cloud computing and increase their employability..



Professor Delivers Keynote at International Conference

Dr. Firuz Kamalov, Faculty of Engineering, Applied Science and Technology, was invited to deliver a keynote speech at the International Conference on Intelligent Computing Systems and Data Analytics Applications (ICSDAA) conference held in Jordan in December 2019. As one of the leading experts in Machine Learning in the Middle East, Dr. Firuz introduced a new approach to address imbalanced datasets that have outperformed the current state-of-the-art techniques. The newly proposed method has wide-ranging implications in applications of A.I. to medical diagnostics, network intrusion detection, fraud detection and many other fields involving rare events.

ICSDAA 2019 provided a scientific platform for local and international scholars, business professionals, computer experts and technologists who work in all aspects of Artificial Intelligence & Data Analytics. The conference proceedings are published in SCOPUS indexed journal.

Entrepreneur Day

Entrepreneur Day is a joint initiative led by The UAE Space Agency and Krypto Labs to find rising students to participate at the NewSpace Innovation Program. The Entrepreneur Day event is designed to encourage students to take part in the mentioned program. Faculty of Engineering is hosting Entrepreneur Day for the second year. The event was carried out in two sessions to introduce business entrepreneurship and to allow students to pitch their startup-tech ideas. Eight innovative ideas were presented to a jury of our faculty and Krypto Labs team to win a prize worth of AED 1,000. The event crowned two teams, tied in number of points, as the "Legend Entrepreneur" who shared the prize equally worth of AED 1,000.

Student Name	Major	Pitch Idea
Abdullah Athab	Electrical Engineering (Telecom)	
Yazan Awwad	Electrical Engineering (Telecom)	
Mohammad Naser	Electrical Engineering (Telecom)	Wireless ROV (an affordable wireless submarine remotely operated vehicle)
Ali Jabbari	Electrical Engineering (Telecom)	
Hussein Abou El Dahab	Network Engineering	AI-Spam Detection (An implementation of machine learning algorithm to detect spam emails)
Fadi Suleiman	Network Engineering	

CUD Professor Receives U.S. Patent

Congratulations to Dr. Adel Ben Mnaouer, Professor in the Department of Computer Engineering and Computational Sciences, for receiving a U.S. patent for his collaboration in co-inventing an air quality monitoring device.



Dr. Adel Ben Mnaouer, who has been actively involved in the development of the device, commented: "The sensing board proposed in the patent represents a revolutionary invention capable of ensuring large-scale deployment of Air Quality sensing, covering a metropolitan city area with minimum costs and in a 'set-and-forget' scenario, due to its autonomous energy harvesting capabilities."

According to Prof. Adel, the evaluation report carried out in the U.S., and the Environmental Protection Agency (EPA) has shown willingness to consider testing the sensing board and publishing the data if requested by the inventors. This recognition would enable documented evidence of the device's performance, leading to additional potential licensing opportunities.



The device was developed through a US 1\$ million funding arrangement in a joint collaboration involving three universities: Qatar University, Universita de Brescia, Italy, and Canadian University Dubai and has received praise from Professor Rod Jones at the University of Cambridge and Mike Jarrett at the University of California, Berkeley.

https://www.zawya.com/mena/en/press-releases/story/CUD_professors_co-invention_an_air-quality-monitoring_device_gets_US_patent-ZAWYA20191209081200/

<https://menafn.com/1099395471/UAE-CUD-professors-co-invention-an-air-quality-monitoring-device-gets-US-patent>



The CUD Engineering Team under the name "Do-Smart" beat four teams from the region's major universities to win the VEXU MENA Region Robotics Challenge that took place on February 2020 ,15. The CUD Team has become the first university team from the UAE to qualify for the prestigious VEXU World Championship. The VEXU World Championship has been recognized as the largest robotics competition in the world by Guinness Book of World Records.

CUD team wins VEXU Mena Robotics Challenge, qualifies for World Championship USA



Under the supervision of Dr. Ahmed Al-Gindy, Assistant Professor, Faculty of Engineering, Applied Science & Technology, the CUD team "Do-Smart" outclassed teams from the following universities: University of Sharjah, Abu Dhabi University, King Saud University in Saudi Arabia and the American University of the Middle East in Kuwait.

The VEXU college and university competition has more than 300 teams competing in local tournaments and at VEX Worlds. Based on the VEX Robotics Competition, VEXU teams are allowed more customization and greater flexibility than other grade levels while providing the effective costs and real-world limitations of a restricted development environment.

A.I. powered autonomous drone wins first prize at Innovation Day

"Morshedy", an AI-powered drone equipped with Bluetooth wireless speaker, was awarded the first prize at Innovation Day celebrated at Canadian University Dubai (CUD) on 19th February.

The project was created by CUD students Saif Mohammed Al Sabbagh and Omar Ibrahim under the guidance of Dr. Ziad El Khatib, Assistance Professor, Faculty of Engineering and Architecture.

The drone is equipped with AI system that detects and tracks object and plans the flight mission. An A.I.-Dashboard helps control the drone by drawing its fly path or guiding it to the zone identified for flying. The speaking functionality was uploaded using a wireless Bluetooth system that easily converts text to speech.

"The A.I. Air Guide drone can be used for different tasks and at various locations. For example, at a major exhibition, it can guide visitors to the stands through the A.I.-powered function that converts text to voice," explained Dr. Ziad El Khatib.

The concept will be presented to large companies with demonstrations of how the AI-powered drone could be used at conferences or for assisting the medical emergency crew prior to the ambulance arrival during an accident.

CUD signs partnership agreement with Red Hat Academy

Canadian University Dubai and Red Hat Academy have signed an agreement to bring Red Hat Academy courses to university students. Dr. Adel Ben Mnaouer, Professor in the Department of Computer Engineering and Computational Sciences initiated the collaboration. The partnership agreement was signed by Dr. Sherif Moussa, Dean of Faculty of Engineering, Applied Science and Technology, CUD, and Adrian M. Pickering, Regional General Manager, Red Hat MENA.

Red Hat is the world's leading provider of open source software solutions, using a community-powered approach to reliable and high-performing cloud, Linux, middleware, storage and virtual technologies.

"We have noticed that there is a significant shift in the industry towards open source. Through this agreement, our students will be able to set up their own-open source skills with the help of Red Hat technology skills offered in their programs, thus opening doors to exciting careers in the IT industry," said Dr. Adel.

As Red Hat Academy courses are tailored towards job definition and not on teaching general topics, they are designed to successfully prepare students to succeed on the Red Hat certification exams and help them to prove their skills and build their careers.

More information on the program, FAQs and the curriculum is available on the Red Hat Academy website.



We Are Expanding to City Walk

We're excited to announce our university's major expansion this September - we will be taking over City Walk's 'iconic' buildings! The next-generation campus will be a host of state-of-the-art amenities, with a focus on entrepreneurship, research and non-conventional approaches to teaching and learning. Combining all the essential elements of technology, the new campus will bring a totally new experience to students. The expansion will include:

- A wide range of laboratories
- Research facilities
- Media studios
- High-tech classrooms
- A multipurpose theatre
- Gymnasium
- Dedicated student centre
- Dining and entertainment options on and around the campus
- and many more!

City Walk is an open, design-inspired neighbourhood in the heart of Dubai with hundreds of dining and entertainment options alongside Downtown skyscrapers. Its ideal location, vibrant community and contemporary architecture makes it the best place for students to learn, innovate, and explore.





TRANSFER TO CANADA

Partner Spotlight: Queen's University

Queen's University is one of the oldest research universities in Canada. Queen's School of Computing is home to diverse areas of study such as software design, game development, biomedical computing, and mathematics. Offering an exciting learning experience in this ever-changing field and prepares you for countless careers and graduate degrees.

Students of Canadian University Dubai with a cumulative GPA of 2.60 or higher, can complete their first two years at CUD and then transfer directly to Queen's University and graduate in Canada.

For more information on transfer to Canada partners, please visit:
www.cud.ac.ae/international-education/study-canada

Student spotlight: Congratulations to our transferring students of 2019!

Nahid Ibrahim,
Computer and Networking Engineering Technology,
Dalhousie University

Umair Shoukat,
Computer and Networking Engineering Technology,
University of New Brunswick

Kulkirat Singh,
Computer and Networking Engineering Technology,
University of New Brunswick

Walid Donia,
Electrical Engineering-Mechatronics,
Dalhousie University

Muhammad Huzaifa Bin Sohail,
Network Engineering,
Brock University

Mohammed Qasim Karjatwala ,
Network Engineering,
McMaster University

Zeeshan Nawaz,
Network Engineering,
University of New Brunswick

Musaab Bin Shahid,
Network Engineering,
University of Calgary





JOIN THE CLUB

The CUD Robotics Club was established in Fall 2015 to bring together students from across the university to create working robots.

Participation in the club is a fun way to develop new skills and explore the future of technology, while meeting other students from around the university. Members also have the opportunity to take part in external events and competitions in the UAE and the wider region.

The Robotics Club operates under three main categories.

1) Mechanical: This category involves working on building a robot physically from scratch, transforming the imagination of a robot design into a real robot.

2) Electronics: This category involves creating the connection between the robot parts through various boards, and then connecting to an active object that can be read by a PC or be controlled by a wired or wireless controller.

3) Software: This category involves writing the codes to make the robots sensor active and readable, and to give commands that make the robot functionally work.

Our Mission

The purpose of the CUD Robotics Club is to empower ambitious students to build robots for fun and competition, remove barriers from entry into robotics, and create a path to success.

Our Vision

We aim to bring together members from all majors of the university, so by having different perspectives; we will be able to create a community that knows about robots and also make it enjoyable at the same time.



Ranked one of the top 10 universities in the UAE

QS University Rankings 2020

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