

# CCES NEWS



College of Computer Engineering and Science

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## CCES program development committee met with TIEC representatives to discuss MSc/BSc Cybersecurity programs

CCES cybersecurity program development committee members had a video conference on June 10, 2019, with Texas International Education Consortium (TIEC) executives. The goal of the meeting is to review the BSc and MSc programs in cybersecurity that were designed by CCES. From TIEC, the President and CEO Ms. Robin J. Lerner and Dr. Shouhuai Xu have attended the meeting. Several key items were discussed, including course structure, laboratory resources, and Cisco Network Academy security track were discussed. PMU faculty emphasized on the importance of practical hands-on demos, lab exercises and projects in cybersecurity programs which should distinguish PMU programs from similar others offered by local universities. TIEC team concurred that the submitted MSc and BSc cybersecurity study plans are well organized and meet widely-adopted, internationally-recognized standards. Dr. Xu also discussed possible collaboration between PMU and US universities.



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# CCES faculty supporting the Second ICTCS Conference organized by PSU in partnership with PMU

Princess Sumaya University (Jordan) and in Partnership with PMU is organizing the Second International Conference on New Trends in Computing Science (ICTCS2019). The conference will host enthusiast scientists, academics, and professionals to present and discuss their innovative research and concepts in different areas of computer science such as data science, intelligent systems, security, natural language processing, Internet of Things, and electronic & virtual learning. Most of the CCES faculty are taking part of this conference by serving as track chairs, co-chairs, and technical Program Committees for the research papers already submitted by researchers across the world. The conference will be held on October 9-11, 2019 in Amman, Jordan.



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# CCES faculty participating in patent workshop and filing for 5 candidate patents

CCES faculty keenly attended a presentation about patent filing application process by Dr. Stefan Koschmieder - OBLON Law firm representative held on Tuesday 25<sup>th</sup> June 2019. Discussions included the type of research/inventions which are patentable, conversion of conference/journal papers research work towards a successful patent, the time period taken to get a patent, commercialization of the invention and how PMU in cooperation with OBLON can assist the faculty members in facilitating the patent filing process. These discussions encouraged CCES faculty to initiate patent applications and have culminated in having 5 candidate ideas being submitted for review: (1) "Automated Grading for Handwritten Answer Sheets using Convolutional Neural Networks", (2) "Underwater Fish Classification Using Remotely Operated Vehicle", (3) "Agriculture Assistant Drone (AAD)", (4) "Hands free Educational Application for Disable Student", and (5) A Multi-Tiered Framework for the Security Analysis of Complex Infrastructure. These patent ideas are the result of senior design projects being worked with CCES students as well as ongoing faculty projects and research work.

# CCES supporting its broad community

Part of the PMU community service program, CCES leaders conducted several meetings with the office of Vice Rector for Business Development and Communication to discuss the possible support level that CCES can provide to the Directorate of Security Patrols in the Eastern Province. CCES has proposed support in four different areas that might be of huge interest to the Security Patrols department personnel. These include: Computer Maintenance, Computer Skills in office environment, Using Excel (Basic level), and Using Excel (Intermediate level). We are looking forward to support our community!





## Record number of CCES students being hosted in many Public and Private Saudi Companies as part of Practical Training course

Part of the IT/CS/CE program requirements, CCES students need to take an internship course ; where the students need to spend 8 weeks in any private or public company to get exposed to the professional life and put in practice the technical and soft skills they have learned at PMU over a period of 3 to 4 years. This year a record number of students have applied for internship - close to 80 students; and were accommodated by more than 28 companies. These include: Aramco, Chevron Phillips, National Petroleum Services, Halliburton, Yocogawa, Systems Strategic business Solutions, Schlumberger, Saline Water Conversation, KAMCO, ANB, Rawabi Holding, Lab Systems, Naizak, H2Solutions, Arkad Engg. and Const. Co., GCCIA (Gulf Cooperation Council Interconnection Authority), NESMA Trading Co., Worley Parsons, Al Falak Co, etc. CCES is looking forward to continue providing future engineers and leaders with the right skills that the job market needs.

## CCES supporting Prince Turki bin Mohammad bin Fahd Innovation Center launching Mobile App Challenge Competition

Part of its leading efforts in serving its community and in-line with its mission, Prince Mohammad University (PMU) is sponsoring an app development event “Sustainable PMU Community Mobile App Challenge” inviting high school, College/University students, professional developers to design and develop sustainable creative mobile applications in various domains to better serve the wide community and targeting today’s most pressing societal needs. This event will be carried under the umbrella of Prince Turki bin Mohammad bin Fahd Innovation Center at PMU and is intended to bridge the gap between the academia and business society as well as to promote the awareness of the need for assistive and accessible technologies by encouraging innovation through hands-on and fun contests. PMU will be awarding valuable cash awards and trophies to the most creative ideas. CCES is providing all technical support to ensure the success of this event.

**مسابقة جامعة الأمير محمد بن فهد لفكرة أفضل تطبيق إلكتروني للأجهزة الذكية**  
 بدعم من مركز الأمير تركي بن محمد بن فهد للإبداع وريادة الأعمال

<p><b>الشروط و الأحكام</b></p> <p>فكرة واضحة الأهداف، قابلة للتنفيذ،              تخدم المجتمع، مجهود شخصي،              المشاركة كأفراد أو فريق، لم يتم              المنافسة بها في مسابقات سابقة،              الإلتزام بثقافة المملكة.</p>	<p><b>الجوائز</b></p> <p>الجائزة الأولى              50.000 ريال              الجائزة الثانية              30.000 ريال              الجائزة الثالثة              20.000 ريال</p>	<p><b>المسابقة</b></p> <p>تصميم تطبيقات إلكترونية للأجهزة              الذكية تخدم المجتمع على نحو أفضل              في مجالات عدة (التعليم، السياحة،              المدينة الذكية، الطاقة، الرعاية              الصحية، إدارة الأموال، البيئة، الخ)</p>
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# CCES actively involving students in research work


CCES faculty are doing more concrete steps in involving students in research work. Most of this research is the result of senior design projects, course project, or faculty research work. Students “Eman Shaikh, Iman Mohiuddin, Aisha Manzoor” have presented their research paper titled “Internet of Things (IoT): Security and Privacy Threats” in the International conference on Computer Applications & Information Security (ICCAIS’2019), held in Riyadh in May 2019. This work was supervised by Dr. Nazee-ruddin Mohammad. Also students “Hawra Al Said, Lina Alkhatib, Aqeela Aloraidh, Shoa Alhaidar” Along with Dr. Abul Bashar have already submitted a research paper titled “Deep Learning Assisted Smart Glasses as Educational Aid for Visually Challenged Students” to the ICTCS 2019.

ICCAIS' 2019	
2 <sup>nd</sup> International Conference on Computer Applications & Information Security	
May 01 – 03, 2019 – Riyadh, Kingdom of Saudi Arabia	
Venue: Holiday Inn Olaya	
Friday, May 3 <sup>rd</sup> , 2019	
Location 1	Holiday Inn Olaya
Location 1	Session No. 22 (by prior arrangement) Session Chair: Dr. Rachid Sammouda
09:00-09:20	Asayel M Alabdullatif and Kholood AlAjaji (Imam Abdulrahman bin Faisal University, Saudi Arabia); <b>Title:</b> “Blockchain-Based Identity Authentication Management in IIoT”, Paper ED-1570523816. (OP)
10:10-10:30	Suheer Ali Al-Hadhrani, (King Saud University, Saudi Arabia); <b>Title:</b> “Sentiment Analysis Of English Tweets: A Comparative Study of Supervised and Unsupervised Approaches”, Paper ED- 1570521043. (OP)
10:30-10:50	Eman Shaikh (Prince Mohammad Bin Fahd University, Saudi Arabia); <b>Title:</b> “Internet of Things (IoT): Security and Privacy Threats”, Paper ED-1570513758. (OP)

# Registration to the newly offered BSc program in Software Engineering already started

CCES has already finished with the process of launching a new program in Software Engineering. This program was designed jointly by TIEC and CCES faculty to fulfill the needs of students at PMU and at the Kingdom as whole. Students have already started registering for this program which is expected to draw large number of students from both genders.

### Introduction



Software engineering is viewed as a new engineering discipline concerned with all aspects related to the life cycle of software development and production. It has grown so fast that it has become firmly linked to all other computer related areas such as artificial intelligence, parallel processing, computer graphics, human-computer interaction, database management systems, and many others. Software Engineering embraces all technical skills engineers need to acquire in developing high-quality, efficient, usable, accessible, maintainable, secure professional software improving existing software. These skills include concepts, models, theories, practices, techniques and tools.

### Why Software Engineering?

Students who want to focus on software engineering are expected to gain and integrate knowledge from various subject areas including computer programming, data structures, human-computer interaction, database systems, web development, software project management, software design, software testing, systems analysis, and software quality assurance. These skills are needed to solve current challenges in software engineering research and development such as: dealing with the increased complexity of software required in new applications, the need to develop trustworthy and secure software, handle the increased market demands for a quick turnaround from concept to deployment and operation, etc.

### Program Objectives

- Graduates are expected to be employed in industry, government, or entrepreneurial endeavors to demonstrate professional advancement through significant technical achievements.
- Graduates conduct themselves ethically and with integrity, upholding social responsibility and promoting sustainability.
- Graduates demonstrate the ability to work effectively as a team member and/or leader in an ever-changing professional environment.
- Graduates build upon and adapt knowledge of science, mathematics, and engineering to take on more expansive tasks that require an increased level of self-reliance, technical expertise, and leadership.

### Program Outcomes

- a. an ability to apply knowledge of mathematics, science, and engineering.
- b. an ability to design and conduct experiments, as well as to analyze and interpret data.
- c. an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- d. an ability to function on multi-disciplinary teams.
- e. an ability to identify, formulate, and solve engineering problems.
- f. an understanding of professional and ethical responsibility.
- g. an ability to communicate effectively.
- h. the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
- i. a recognition of the need for, and an ability to engage in, life-long learning.
- j. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
- k. the ability to analyze, design, verify, validate, implement, apply, and maintain software systems.


### Career Opportunities

Potential career for Software Engineering

- Computer Systems Engineer
- Software Quality Engineer
- Applications Programmer
- Design Technician/Specialist (R&D)
- Systems Technician
- Analyst Programmer

### Where some of our graduates will be working

Aramco	Halliburton
Sabic	STC
Oracle	Mobily
Samba	Careem
Toshiba	Yokogawa
Rawabi Holdings	GE
Shlumberger	Accenture



## CCES faculty attended an NCAAA workshop organized by the Deanship of Quality Assurance

Part of NCAAA accreditation for PMU existing programs is to respond to quality and accreditation criteria of all NCAAA standards. CCES faculty attended a workshop delivered by the dean of QA on May 5<sup>th</sup>, 2019 to discuss about NCAAA Standard 3. Standard 3 covers the Learning and Teaching. The outcome of this workshop is to: list the area of improvement for any item in the self-evaluation scale document, to write the strength of all items with Distinctive Compliance, and to look for items with Perfect Compliance and see if there are any suggestions for improvements.



## Sakeena Batool Juddy - First CCES student to join University of Central Florida (UCF) as part of the Study Abroad Program (SAP) program

Sakeena Batool Juddy - a top Computer Science student will be joining UCF during the fall session for 1 semester as part of the SAP program. The SAP program provides students with the opportunity to broaden their horizons and get the chance to pursue their personal, academic, and professional career growth. Successful candidates will receive a full support from PMU management during one semester and possible two. CCES leaders worked closely with the Career service department to ensure that Sakeena’s Journey in UCF will be as fruitful and as successful as possible. Also CCES faculty provided the right academic advising to Sakeena to ensure a great performance in the courses she intends to take. Good luck Sakeena!

