

## DEPARTMENT OF ELECTROMECHANICAL ENGINEERING

# NEWS

Abu Dhabi Polytechnic students  
achieved top places in Global Hybrid  
Electric Challenge .

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One of Abu Dhabi Polytechnic stu-  
dents won the golden medal in the  
EmiratesSkills competition (the Floris-  
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## Welcome

Dear EMET Friends,  
Alumni and Students:

It is my pleasure to welcome you to the first all-digital version of the *EMET Newsletter*. We have an incredible list of activities and accomplishments to report to you.

The EMET department is comprised of four distinct disciplines that offer intense experiential education in Mechanical, Mechatronics, Electrical, and Instrumentation and Control engineering technology. The students of these disciplines graduate as engineers with the ability to adapt, grow, and succeed in a highly competitive engineering workplace.

The department's unique curriculum supports engineering education to include manufacturing processes, mechanical design, electrical and mechanical systems integration, mechatronics engineering, robotics, and control systems.

EMET coursework meet the real-world demands through technical studies that are merged with intensive practical practices. The industry-relevant curriculum is taught by faculty at the top of their fields to provide the students with the skills and knowledge that employers are looking for.

The technical skills learnt in the EMET program are enhanced through real-world graduation projects. Moreover, many effective tools are embedded to complement the EMET technical educational program that includes: effective communications, problem-solving, and interpersonal skills that add value to our graduates. EMET Advisory Committee provides regular review and input of its curriculum ensuring that the EMET program is always on the cutting edge of industry developments.

Recently, students participated in international and national competitions such as:

- ITEAD's 1<sup>st</sup> Nextion Christmas Challenge – Won 2<sup>nd</sup> place
- Global Hybrid Electric Car Challenge, Egypt, March 2017 – Won 1<sup>st</sup> place
- EmiratesSkills National Competition
- Think Science Competitions 2015, 2016 and 2017

A new Graduate program in Systems Engineering is being planned to be offered next academic year. The feasibility study is almost concluded and will be soon submitted to the CAA for approval.







## Global Hybrid Electric Challenge

A team from Abu Dhabi Polytechnic EMET department has participated in the Global Hybrid Electric Challenge, which is an international competition that was held in Egypt in March 2017. The team has assembled a hybrid electric vehicle and competed in the race and harvested five trophies as follows:

1. First place in the hybrid race
2. First place in the vehicle workmanship
3. First place in the team safety
4. Second place in the electric race
5. Second place in the overall result

The team members are Khamis Ahmed Albreiki, Obaid Yousif Alnaqbi, Hamad Abdulwahed Alkamali, Abdulla Abubaker Shoudari Bahadur, Adel Ali Almarzooqi, Mohamed Abbas albannai, Obaid Ahmed Alblooshi, Osama Zaid Alkatheeri, Omran Mohammed Albannai and supervised by Dr. Qais Khasawneh.

The team performance this year was exceptional and so professional based on the judges' comments. The winning and professionalism of the team is clear evidence that ADPOLY has the capability and vision of producing a high caliber engineers with the hands on and knowledge necessary to proceed with their life careers.





## Think Science Competition

The competition this year was organized between the 18<sup>th</sup> and the 20<sup>th</sup> of April in the World Trade Center- Dubai. Two groups from the EMET program participated and showcased their projects.

**The first project** was titled “MediPahrm Smart Fridge” which was done by Ahmad Alzaabi, Hamad AlAli, Khulud Al Habsi and supervised and co- supervised by Dr. Saleh Ahmad and Eng. Rasha Tabasha. The most important thing humans need to maintain is their health. With that being said, taking ones prescribed medicine in the appropriate times with the insurance of the use of the right dosage, while keeping the medicines preserved in a refrigerated environment is a key. The project was aimed to help patients to take their medicine at the prescribed time and dosage. It has a security system with keypad and fingerprint scanner to avoid any tampering with the medications. The MediPahrm Smart Medical Fridge is connected to the GSM network to send notifications to the patient whenever it is time for taking their medicine.



**The second project** “Assistive Jacket for the Visually Impaired” was done by Eissa Almarzooqi, Obaid Alshehhi and supervised by Eng. Shoaib Hussain. The project was about a vest that a visually impaired person might wear. The vest includes sensors that are able to sense the obstacles in front of a person and based on the distance to the obstacles, vibrators in the jacket will vibrate to alert the visually impaired person.





## EmiratesSkills National Competition

The National Competition for the year 2017 took place between the 11<sup>th</sup> and the 13<sup>th</sup> of April at Abu Dhabi National Exhibition Center. Abu Dhabi Polytechnic EMET Students have participated in three categories. The first category is the Mechatronics Competition which intends to cover the basic skills of mechatronics engineering processes and its main components such as pneumatic technology, electro-pneumatic technology, PLC programming, troubleshooting, maintenance, simulation and optimization. Two Students from the EMET program participated in the Mechatronics competition, Abdulla Khaled Ahmed Abdulla Almessabi and Eidha Alomair Omar Al Rashdi. The students were trained by Eng. Ihab Abdelrahman. The group was able to win the bronze medal in that category. The second competition is the Mobile Robotics Competition which is concerned with setting up, programming, managing and maintaining mechanical, electrical and control systems within a mobile robot, in addition to installing, operating and troubleshooting mobile robot control systems. Two students from the EMET program joined the competition, Nouf Alhosani and Shamma Almazrouei. Eng. Abd Al Rahman, Eng. Shoaib Hussain, Eng. Umair Muzaffar and Eng. Jamil Fayyad trained the students for this category. The third category is Creative Arts & Fashion where the student Eissa Almarzooqi won the golden medal in the Floristry branch.

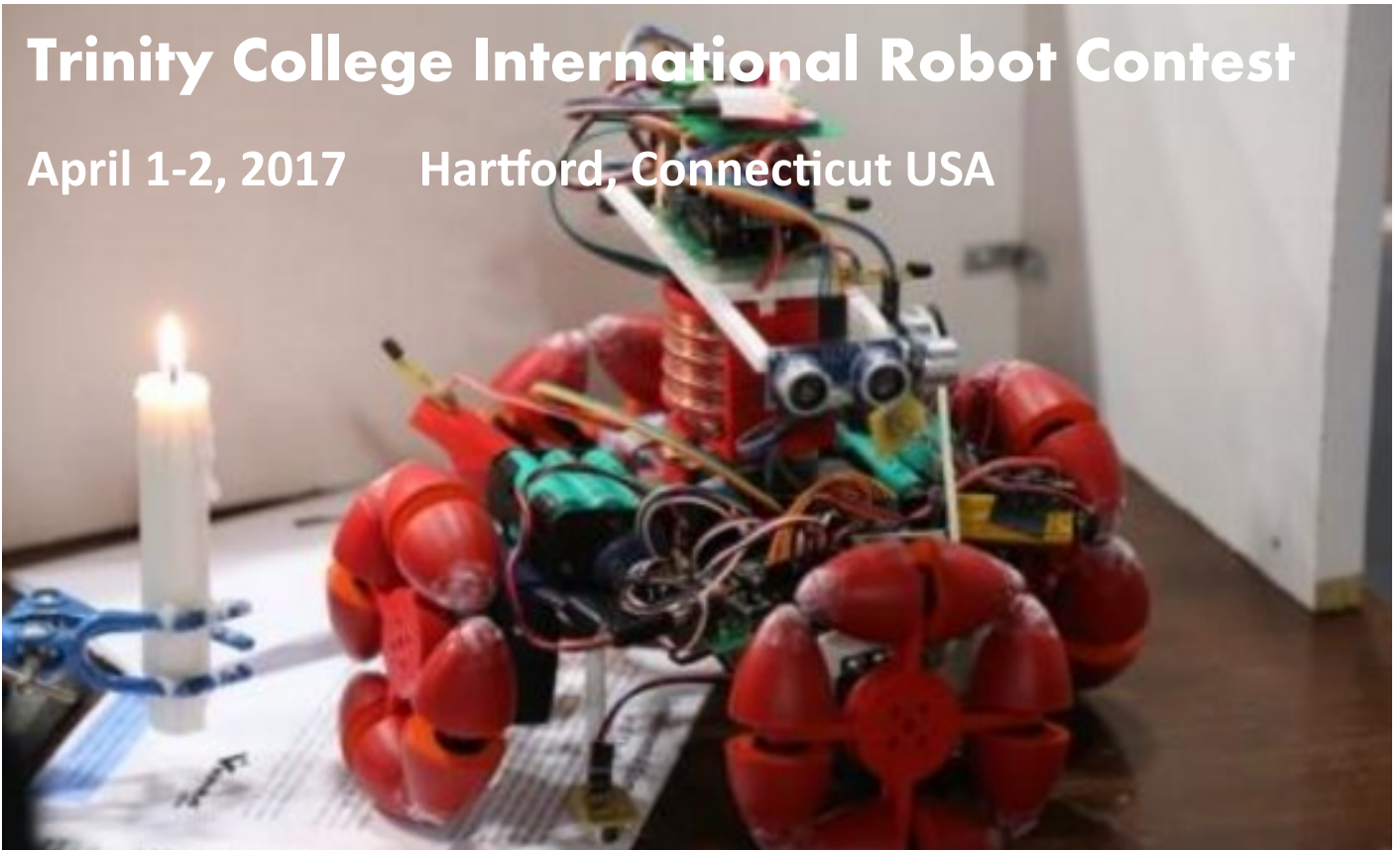


## Mohamed Bin Zayed Majlis for Future Generations

The Majlis was a special opportunity for Emirati University students to meet with UAE government leadership, entrepreneurs and innovators. It was held at Abu Dhabi National Exhibition Centre (ADNEC) for two days, between the 7<sup>th</sup> and the 8<sup>th</sup> of March 2017. The Majlis included several competitions, workshops and challenges. More than 7 students from the EMET program attended and had the chance to take advantage of this unique experience.

# Trinity College International Robot Contest

April 1-2, 2017     Hartford, Connecticut USA



A student from the EMET Department at Abu Dhabi Polytechnic, Fatema Aaref Al Aajel Alteneiji, participated in the Fire- Fighting Home Robot Contest. The contest was held between the 1<sup>st</sup> and the 2<sup>nd</sup> of April in Trinity College at the United States.

The contest consisted of three different levels with several challenges. Fatema's team was able to pass the first level which required a robot to respond to a fire alarm, discover the blaze and to extinguish it in the shortest possible time.

## Award Winners

	Project Title	Name	Email	Prize
<b>1<sup>st</sup> Prize</b>	Autopilot display	Francisco Martinez	kis***man@ono.com	5" Nextion Enhanced Display & Expansion Board
<b>2<sup>nd</sup> Prize</b>	MK4duo	Alberto Cotronei	mag***bra@hotmail.com	2.4" Nextion Enhanced Display
	Controlling & Monitoring a System using Bilingual Human Machi	Adel AL-Marzouqi	z***28@hotmail.com	2.4" Nextion Enhanced Display

## ITEAD's 1st Nextion Christmas Challenge

The competition aimed to choose a project that best applies one of its display products. EMET Students, Adel Almarzooqi and Majed Hasan, won the second place in the competition with their Graduation project titled "Controlling and Monitoring of a System using Bilingual Human Machine Interface" that was supervised by Eng. Hussein Al Smairat. The purpose of this project is to control a system using HMI (Human Machine Interface), with ON/OFF Controller or PID Controller.



## Siemens Workshop

On the 22<sup>nd</sup> of March 2017, the 5<sup>th</sup> ADPoly-Siemens Seminar Series was held at Hall 2. Representatives from one of our most important industrial partners, Siemens, was on campus. Ms. Huma George of Siemens Dubai HQ introduced the speaker Mr. David Almer who is the Manager of Systems Simulation in the Siemens Center of Excellence in Europe. Mr. Almer gave an advanced presentation on the modeling techniques related to Systems Simulation that are applied today in the different industries. Mr. Almer also focused on the simulations solutions used in the Automotive Industry. The talk was well attended by students, faculty, and some staff. The students engaged with the speaker and asked many relevant questions that impressed the speaker.

## Global Educational Supplies & Solutions (GESS) Workshops

Faculty members from the EMET program (Eng. Hussam Fraij , Eng. Mohamad Elmaoud & Eng. Ahmad Alqawasmi) attended two workshops on the 16<sup>th</sup> of March at ATLAB Learning Arena at GESS 2017, DWTC, Dubai.

The first workshop was delivered by Bosch, Germany and it was about Open Core Engineering where i4.0 was introduced (the networking of the machine, people and processes).

The second workshop covered 3D printers and rapid prototyping machines and equipment's (PRO TECHNOLOGY).







### Vapor Compression Refrigeration Unit Training

Edutech conducted a two- day training for EMET staff, during which practical tasks were done using the Vapour Compression Refrigeration Unit. Upon the completion of the training participants were awarded certificates of training completion. The workshop was conducted on the 3<sup>rd</sup> and the 4<sup>th</sup> of March 2017 by Eng. Muhamad Meraj from Edutech.

### LabVIEW and DAQ Workshop

On the 23<sup>rd</sup> of February, Ms. Leen Adnan from National Instruments conducted a one day workshop on LabVIEW for EMET faculty members. The workshop served as an introduction to LabVIEW (by implementing different tasks) and to Data Acquisition (by implementing different circuits) .



### Mechanical Lab 1 Training

A training was conducted by Echo LAB from Italy on the 5<sup>th</sup> and 6<sup>th</sup> of February 2017 for EMET Mechanical Engineers. The training covered working on several equipment such as Universal Testing Machine (UTM), Impact Testing Machine, and Torsion Testing Machine. The training included assembly and disassembly of the jaws of the UTM to convert it from the cylindrical bar mode to flat bar mode, tensile test mode to compression test mode, and vice versa. In addition, safety precautions while using the machines, installing the specimen into the apparatus, and performing tests were covered. The training also covered the calibration of the apparatus, using its software to enter the test specifications, and the collection of test data from the software.

### Preparing Course Assessment Files CAF Workshop

A workshop titled “Preparing Course Assessment Files CAF” was conducted on the 26<sup>th</sup> of January 2017 by Eng. Hussein Alsmairat. The purpose of the workshop was to clarify the procedure of preparing CAF, discussing the common technical errors and working towards error-free CAFs. Following the presentation, there was an open discussion with the instructors on how to utilize CAFs in the continuous course improvement plans.

### Advising Workshop

Due to the transition of ADPoly from quarter to semester system, EMET department organized an advising workshop for all advisors on the 19<sup>th</sup> of January. It was delivered by Eng. Umair Muzaffar. In this workshop, the process of transferring the students from the quarter plan to the new semester plan was explained in details. The list of courses that are mapped from the quarter plan to the semester plan was shared with the attendees. The updated study plans with the new prerequisites were also discussed in the session. The advisors were also informed about the preparation of the graduation checklist and some key points were discussed in this regard. Each advisor is responsible to prepare a graduation checklist for their advisees. Additionally, the transferred students from Al-Ain and Nuclear and the plans for their graduation were discussed in detail. The workshop ended with a question answer session.





## School Backpacks Community Service Project

The EMET Program organized its first community service project which took place between the 15<sup>th</sup> of February and the 15<sup>th</sup> of March. The project aimed to collect new school backpacks with stationary for children in need around the world. Students and staff did contribute with donations to the project. Moreover, there was a mini stationary shop available at the “Dkakeena” event which provided the members of the community a chance to buy new school bags with stationary for donations. By the end of the project, 122 school backpacks were collected and sent via the RED Crescent to the children in need. The idea was suggested by Eng. Rasha Tabasha and EMET students Maryam Alsuwaidi , Siddeeq Almarzouqi , Mariam Alnaqbi, Fatema Alshamsi, Moza Ahmed, Bashayer Alkatheeri, Asma Almahri, Mohammed Alnaqbi, Rashid Obaid and Abdulla Aljunaibi volunteered to make this project a successful one. The EMET program thanks all donators for their contributions and specially thanks the volunteers who dedicated their time for this community service project.

## The Knowledge Enrichment Club “KEC”

A new club called “The Knowledge Enrichment Club” was initiated at the EMET program in February 2017 by Eng. Rasha Tabasha. The club aims to strengthen the skills of EMET students in different areas such as Excel, PowerPoint, Math and other soft skills. The club held three workshops during the month of March covering Excel and PowerPoint. In addition, the club organized a total of 13 math tutorials in the months of March and April. By the end of the Spring semester, more than 40 students did benefit from the workshops and tutorials organized by the club.





## Graduation Project II

**This semester the EMET program had 12 Graduation projects.** The projects included different engineering innovations. Each project had a poster presented and a prototype. Below is the list of accomplished project for the Spring semester.

- Velocity Profile of Fluids in Smooth and Rough Pipes
- Machine Sorting by Height
- Smart Medical Refrigerator
- Construction of a Wind Tunnel
- Leap Motion Control
- Hybrid Car
- Power Generation Using Solar Heated Sand
- Flexible Solar Panels
- Bending Machine
- Fly Ash Concrete Additive
- Smart Water Storage Tank System
- Level Indicator and Controller

## New Labs

EMET Department had several new mechanical labs established this semester. The new labs give the students the chance to get involved in typical industrial systems which will help them understand the theoretical parts and improve their practical skills in different mechanical scopes. The new labs include HVAC Lab, Thermo- Fluid I Lab, and Mechanical I Lab. The labs contain new equipment such as Industrial Refrigeration Trainer, Central Air Conditioning Trainer, Heat Pump Trainer, Industrial Heat Pump Trainer, Vapour Compression Refrigeration Units, Mini Steam Power Plant, UTM Machine, Impact Testing Machine, Torsion Testing Machine, Microscopes and more.





# WELCOME ON BOARD!



**Eng. Ahmad Alqawasmi**  
Laboratory Technologist  
MSc, Mechanical Engineering



**Eng. Mohamad Youssef El.Maoud**  
Laboratory Technologist  
BSc, 2015, Mechanical Engineering



# EMET Department Newsletter

## Abu Dhabi Polytechnic

### Institute of Applied Technology

Mohamed Bin Zayed City  
Abu Dhabi

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