

e-ACT 2017



THE AL MUSANNA COLLEGE OF TECHNOLOGY ANNUAL ELECTRONIC MAGAZINE

3RD ISSUE

Persian Gulf

BAHRAIN

QATAR

UNITED ARAB EMIRATES

IRAN

Gulf of Oman

Musanna College of Technology

Muscat
Sultan Qaboos University

THE ZILZAL JOURNEY

SAUDI ARABIA

20 National and International awards for ZilZal

31 Two awards for Best FURAP Research Project in Engineering Department

22 Graduation Ceremony 2017
Six hundred and forty nine (649) Grduates awarded

10 National Day Celebrations
The campus was looking bright and colorful with flags, streamers and buntings everywhere.

34 'iTech Marathon', 'TTEX', 'REVERA', InvenT'

27 'Best FURAP Research Project' Award in Business Studies Department

38 Oman Team Wins 2nd Place at 2017 Asian-Pacific University Football & Cheerleading Championship in China

Arabian Sea



Released on January 2018



Excerpts from the Speech of
His Majesty Sultan Qaboos bin Said

'Our determination to move forward with confidence, towards the broader horizons of comprehensive, sustainable development, remains undiminished. While committed to preserving our own values and identity, we are enthusiastic about developing international relations to reinforce the advances already made. Further progress, we believe, can best be achieved through hard work and the pursuit of knowledge, which will prepare Oman and its citizens for dealing with the emerging realities of the modern age.'

Welcome to e-ACT Magazine, Third Edition!

Greetings to all!

Each issue of our College Magazine is a milestone that reflects our progress, discloses our dreams and revives our thoughts. It reflects a chain of creative skills ranging from collecting information, writing and editing, to eventually designing the magazine. I congratulate the entire magazine team for their hard and fruitful work. Truly, the team is doing an amazing job!

We are happy this year to release the third issue of our e-ACT Magazine. The theme of this issue is to celebrate and share with you the outstanding accomplishments of our students and staff for the year 2017. Quotes by students and staff have been included reflecting their various opinions about the college activities and initiatives, both internal and external. To provide a stimulating and encouraging environment, inspirational articles and other interesting topics are included.

Remember, each one of you has the potential to be a productive employee, so strive hard, bearing in mind that nothing should hinder you from marching ahead.

Thank you and happy reading!



Dr. Issa Saif Mohammed Al Tubi
College Dean

Table of Contents

5	Scenic Beauty of ACT
6	Three Indicators that Build Quality – Quality Assurance
7	Workshop on Curriculum Review in Collaboration with Industry Partners
8	Board of Trustees and CEOs Visit
9	ACT Hosts OCCI First & Second Stage Selection and Awarding Ceremony
10	National Day Celebrations
11	National Day Photographs
12	Zimam National Leadership Programme
	Jawala Group visit to Social Care House, Rustaq
13	TWASUL Group Activity Visit to Social Care House
	Workshop on Development of Leadership Skills
	Workshops on Photography
14	The Art of Affective Teaching
15	Quantum Mechanics and Literature
	Poem - 'Mother'
16 - 19	ETC: Enhancing the Achievements of ACT
20 - 21	The ZilZal Journey to Success
22 - 24	Graduation Ceremony
25	Student Honors and Messages
26	Best Paper Award
	First Prize for Poster Presentation
	Industrial Visit
27	Best FURAP Research Project – BS
	Global Entrepreneurship Week (GEW) 2017
	On becoming an Entrepreneur
28	ACT wins First Prize in Finals of GCC Robotics Challenge, Qatar 2017
29	IEEE GCC Students and Young Professionals Congress 2017, Bahrain
30	Seminars and Workshops
31	Faculty-mentored Undergraduate Research Award Program (FURAP)
32	@ Engineering
33	Research & Publications in Engineering
34	Awards - Information Technology
35	The Spirit of Competition
	NetRiders Competition
	How Competitions Enhance Learning
36	INSPIRA @ ACT: INTRANET SPACE
	Building a Culture of Continuous learning with MOOCs
37	Sharing Experiences – Reflections on my Recent Achievement
38	University football team wins Second Place in China
39	Staff Football Championship
	ACT Crowned Winner of Football Championship for Institutions of Higher Education



This beautiful blend of building and garden captured my attention one morning.

Nestor Guerrero

I must have taken this photo during the 2nd semester when we have such weather conditions. Coming from Europe, although I love the endless sunshine we have in Oman, I really miss the sight of some cloud. These days are worth waiting for.

Ms. Anna Vorbek

Scenic Beauty of ACT

The Oman Flag is flying high over the ACT campus!

Omar Al Maamari



The ACT campus is beautiful even at night. This was taken during the preparation for Graduation Day.

Sultan Khamis Al-Harrasi

Blue sky and the beautiful entrance of the college...

Suguna Raju

This lush green garden will make your day right!

Sameer Zaharan Rashid Al Ghafri





Three Indicators that Build Quality

By Elena Encomienda Pascual

Quality Assurance Office

Academic institutions recognize the need for continuous improvements in the standards and programs which are already in place. The responsibility for quality improvement is embedded within the roles, duties and responsibilities of everyone in the institution. Although there are many elements that directly or indirectly contribute in maintaining quality education, three factors are considered to be important and mutually dependent on each other for ensuring success of output; **Input, systems and process**, and **feedback**. The quality of education is influenced by these factors in providing sufficient and effective educational services to **the main recipient, the student**.

Quality assurance processes operate at both internal and external levels. The systems and procedures used for meeting quality standards are developed internally (within the institution) or externally (validating bodies such as the **OAAA**. ACT will submit its ISA application in October 2019). They are adapted to address the requirements and recommendations after audit.

The first factor is **Input**. Inputs, such as human or educational resources, are embedded into the system and processed to serve its purpose.

Systems and Processes, the second factor, are laid out for use by the stakeholders and it is closely monitored through appropriate operational processes and procedures to determine its effectiveness. As stakeholders experience the system and processes, they start embracing improvement-oriented behavior believing in quality.

The third factor is the **Feedback**, which is collected to ensure the effectiveness of the institution's performance management program. The result provides information about the strengths and weaknesses of the input and systems and processes in relation to the set standards.

These three factors are interrelated and should, therefore, interact symmetrically to ensure a successful quality education system. All stakeholders, especially students (output) will benefit from these three important indicators. The output is apparent in those students who are moving to the next institution's academic level, the graduates who are already in the workforce and other stakeholders' general satisfaction. This will best describe the achievement results of an institutional effective quality system.



Curriculum Review in Collaboration with Industry Partners

The Quality Assurance office organized a first college workshop on **'Curriculum Review in Collaboration with Industry Partners'** on 18 April 2017.

Dr. Issa Saif Mohammed Al Tubi, College Dean, opened the proceedings by welcoming the participants and staff. Dr. Ahmed Ali Ahmed Al Shaihri, Asst. Dean for Academic Affairs (ADAA), HoDs, HoCs, academic and non-academic staff attended the programme, along with around 40 participants from various industries, the public and private sectors.

In the programme, a video presentation was shown about the college, which also focused on the student's activities being held in the departments and centers. Mr. Islam Saleh Al Balushi, BS HoS and OJT Coordinator gave a talk about the

On-the-Job Training (OJT) process and the collaboration between ACT and the industrial partners. He discussed the importance of the OJT programme to students as well as the challenges faced by the college in providing effective OJT placements. Ms. Afrah Al Salmi of the English Language Centre (ELC) presented the courses offered in the ELC- Post foundation and the practical activities provided to students to improve their English skills.

The industrial partners were divided according to the nature of their industry and their preference to attend a programme: BS, IT or Engineering. They were taken on a tour around the departments led by the HoDs. Presentations and discussions took place about Curriculum, Learning Outcomes and Graduate Attributes. Many important points were raised by the industrial partners during the general discussions at the auditorium.

The successful completion of this workshop was due to the cooperation of the IFW Committee and the organizers. The conference ended with a Vote of Thanks by ADAA and Mr. Faisal Al Balushi of the QA Office.



Board of Trustees Visit

In the presence of Her Excellency, Dr. Muna Salem Al Jardani, UnderSecretary of Technical Education and Vocational Training, Ministry of Manpower

The select members of the Board of Trustees for the technical colleges under the Ministry of Manpower and a delegation of CEOs from the private sector visited Al Musanna College of Technology on Thursday, March 2, 2017 in the presence of Her Excellency, Dr. Muna Salem Al Jardani, Undersecretary of Technical Education and Vocational Training, Ministry of Manpower.

The team, firstly, studied the workings of Al Musanna College of Technology through a visual presentation. It examined the development of the paths of education followed in the college through the courses offered and whether these paths met the needs of the labor market to produce qualified national cadres.

The team conducted a field tour of some of the college facilities. They visited the departments of Engineering, Business Studies, Information Technology, the English Language Center and the Center for Educational Technology, where they were briefed on the efforts being made to train students aiming to join the national workforce.



ACT Hosts the OCCI First & Second Stages Selection and Awarding Ceremony



مجلس البحث العلمي
The Research Council



الكلية التقنية بالمصنعة
مركز محافظة جنوب الباطنة



مجلس التجارة والصناعة
Oman Chamber of Commerce & Industry

The Oman Chamber of Commerce and Industry Innovation Award (OCCI), initiated by the Research Council and sponsored by Oman Chamber of Commerce and Industry, held its Selection and Awarding ceremony for its Second Stage at ACT on 10th September 2017. The slogan for the project was **'Contribute your ideas ... to raise your country'**.



Earlier, ACT, as the center for the province of South Batinah, had hosted the First Stage of the Selection and Awarding Ceremony on 15 May, 2017. Out of 48 submitted projects, 22 innovative projects from different sectors were shortlisted and presented during this occasion.

Out of these, five projects were finally selected by the OCCI for the Second stage, namely:

- Creating smart cards - team leader, Ameera Hamed Al Ghafri;
- Smart fishermen - team leader, Balqees Khalifa Al Afari;
- Testing sugar levels for the elderly and people with special needs - team leader, Eshehar Saeed Al-Malki;
- Extracting ointment from the roots and leaves of the Annona reticulata tree and studying its effect on hair growth - team leader, Heba Khalifa Al Ghafri and
- An industrial plant paper industry project by Mai Mubarak Thane Al Saadi.



The OCCI has now reached the Third Stage, where two projects have been selected by the Evaluation Committee.

These include the above mentioned last two projects on ointment extraction by Heba Kalifa Al-Ghafri, Fayza Abdullah Al-Khatiri and Sharifa Hamad Al Ghafri and the second, involving the industrial plant paper industry by Mai Mubarak Al Saadi (Lecturer, Engineering Department).

Celebrating the 47th National Day

ACT celebrated the 47th National Day of Oman on 21 November 2017 with great enthusiasm and a sense of national pride.

The campus looked bright and colourful with flags, streamers and buntings everywhere. His Excellency, Sheikh Hilal Bin Said Al Haji, Governor of South Al Batinah was the Chief Guest of Honour. He visited all the stalls on campus. He was accompanied by Dr. Issa Saif Mohammed Al Tubi, the College Dean, Dr. Ahmed Ali Ahmed Alshahri, Asst. Dean for Academic Affairs and Ms. Monia Mohammed Al Farsi, Asst. Dean for Student Affairs.

The highlights of the programmes on campus this year were a performance by the Folk Art Band, an Exhibition of Fine Arts and Traditional Works, a Photo Gallery, an Instant Photo Studio, a Special National Day Market and an interesting National Day Car Decoration Show.

There was also an Oman History Contest by Student Affairs, the launch of 'Reading Box' by the ETC, Engineering Society and IEEE exhibitions by the Engineering Department and Fine Arts displays and showcases from the Information Technology Department and the Business Studies Department. The cultural show in the auditorium included performances by Al Aazi Folk Art, Inshad Operetta, the recitation of patriotic poems and songs, a stage play and a cake competition.

The ACT family spent a pleasant and relaxing day out in the sun and away from the trials and tribulations of the classroom. The event reflected the love and respect of its people for the country and for his Majesty, Sultan Qaboos.



ACT celebrated the 47th National Day of Oman on 21 November 2017 with enthusiasm and pride!



Photos by: ETC



Photo by: Mr. Ramesh Kumar, BS Lecturer

@ Student Affairs

Zimam National Leadership Programme

A(third) batch of students from ACT participated in the Zimam National Leadership Programme. It was organized by the Omani Authority for Partnership for Development in collaboration with Oman Sail from 3-5 March 2017 at the Millennium Resort in Mussanah.



Jawala Team visit to Social Care House in Rustaq

Students of the Jawala group visited the Social Care House in Rustaq on Wednesday May 24, 2017. They learned about the home, and the services it provides in caring for senior citizens.



TAWASUL Visit to Social Care House

On Wednesday, 25th October, 2017, the TAWASUL group of ACT visited the Social Care House in Rustaq as part of the voluntary and humanitarian initiatives that the group undertakes to help improve the community. The group aims to inspire cooperation and friendship among members of the local community.



Workshop on Development of Leadership Skills

The TAWASUL group organized a workshop titled 'Development of Leadership Skills' on Tuesday, 17th October 2017 in the college auditorium. The workshop was presented by Ms. Wahida Abdullah Al Zidjali.

Workshops by Photography team, Student Affairs

Workshop on 'Composition in Photography'

A workshop on 'Composition in Photography' was organized by the photography team of Student Affairs (SA) on Tuesday, October 17, 2017, at 12 p.m. It was presented by photographer Khalid Abdullah Al Abri, a member of the Al Rustaq Photography Association.



Workshop on 'Basics of Photography'

A workshop on 'Basics of Photography' was organized by the photography team of Student Affairs on Tuesday, October 10, 2017, at 12 p.m. It was presented by photographer Majid Khalid Al Mahdi, head of the team. The workshop aimed to develop the basic skills of photography.

The Art of Affective Teaching

By Dr. Binu Pathippallil Mathew

Lecturer, English Language Center

Every classroom contains students with varied backgrounds, interests, attitudes, and learning styles. Some of these students carry to the classroom not just textbooks and other learning tools but also a lot of personal and learning problems. These basic differences in learners often cause variations in their academic achievements and classroom behavior. Hence, there would always be some students in every class who struggle to keep pace with the rest of the class and be a little disruptive. How can teachers accommodate such students in their classroom and help them thrive and grow, academically and personally? The learning and behavioral problems of these students should be handled at two levels, intellectually and emotionally. In other words, teachers must deal with them using their brains and hearts.

Although the concept of affective teaching is not a new issue in education, it is not widely utilized by teachers in the regular classroom. In modern education, due to corporate interventions, there has been a shift in focus from the inculcation of basic values in life, to the development of knowledge and skills required for the current job market. Some institutions do not give any importance to the human denominator of learning; rather they try to equate men with machines. Educational institutions must be humanizing centres for learning and all learning activities must reflect an intrinsic valuing of the learner as an individual. Hence, the use of affective strategies in teaching is important to rediscover and maintain the dignity of the individual and to restructure the

learning process from automation to humanization.

Affective teaching is the democratic process of interacting with students in a caring, conscious, and committed way. In other words, it is a way of teaching on two levels; intellectually and emotionally, using both brains and hearts. Affective strategy in education is the integration of cognition and emotion in the learning process. It serves to manage emotions, attitudes, and motivation to create a positive attitude towards learning.

There would always be some students in every class who struggle to keep pace with the rest of the class and be a little disruptive.

Teachers should use some relaxation techniques to lower the anxiety level and to create interest in learning. But today, most curricula overemphasize intellectual and cognitive tasks by pouring energies and resources for the sake of cultivating a crop of scientists, doctors and engineers. As a result, affective elements are not given any significance in the classroom.

An important aspect of affective teaching is respecting students. Teachers with traditional concepts might frown at the idea of respecting students. It means to value and accept their different socio-cultural backgrounds and religious beliefs, listen to them, sincerely ask for their opinions and learning preferences, and truly value their prior knowledge. Teachers should allow students to express themselves in class and accept the fact that all are capable of learning. When the uniqueness and dignity of each student is recognized, it frees the growth forces within the individual for self-fulfilling pursuits. It also raises the motivation level and creates in them a positive attitude towards learning. Hence, teachers should direct their focus on the individual development of students. When the learning has personal significance, they can see

use for it and will try to search for new realms of knowledge.

Affective teaching requires an open and free communication with students to facilitate authentic interpersonal relationships. When teachers interact with students in an atmosphere of openness, the emotional base of students is honoured and accepted without any prejudice. A lot of students may have various problems that prevent them from focusing on their studies. So teachers need to have a concern towards such students and provide adequate guidance and support. Teachers must act like their mentors and their guidance should be open-minded and friendly enough for students to approach them at any time without any hesitation. The emotional impact of teachers' behaviour can influence learning because it helps to instill in students a love for the subject they teach. When the teacher provides warmth, acceptance and empathy, the learners feel free to regard their emotions and personal meanings as legitimate content in learning.

Affective teaching requires an open and free communication with students to facilitate authentic interpersonal relationships.

Involving students in decision-making or sharing power in the classroom is also a way of fostering affective teaching and learning. When the teacher makes decisions with the students about the content, assignments, deadlines, class tests, and future learning, they feel empowered and it makes the whole process more democratic. It helps in making their attitude towards their teacher and learning more positive. It dispels the wrong notion that a teacher is just an authoritarian, whose job is to make students do things, allow or prevent actions, and make judgments in class. On the other hand, they begin to feel that the teacher is a facilitator, who is receptive to their problems and who takes great interest in their learning.

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Quantum Mechanics and Literature

By Edilberto C. Cruz

Lecturer, English Language Center

We often consider science and literature as two different subjects occupying distant opposite poles. After all, science is rational, analytic and evidence-based, while literature is regarded as imaginative, creative and intuitive. Each fires up a different part of our brain: scientific skills like analysis are activated in the left hemisphere, while literary skills like understanding metaphors begin in the right hemisphere. However, there are cases when science and literature surprisingly meet.

Consider the fascinating literary concept of intertextuality. This refers to the idea that the meaning of a text is shaped by another text. When an author writes something, he brings into it his personal experiences, knowledge, relationships and so on. For example, the novel *Moby-Dick* by Herman Melville reflects his personal views on life, religion and politics and those of people he read or interacted with. Some of those influences may be easily apparent while others may take a closer reading to unearth. Either way, the novel is a product of its time and the novelists' knowledge and experiences.

What is more interesting is that the reader also shapes the meaning of the text. When one reads *Moby-Dick*, he understands it based on his own experiences and values. It is possible, therefore, that two readers may have a different appreciation of key concepts in the novel. One may discover themes of friendship and duty in reading about Captain Ahab's pursuit of the whale. Another may see it as a metaphor for the battle between good and evil. Each reader's previous knowledge and experiences color his interpretation of the text. In short, the very act of reading changes the text.

Science has a similar concept. In 1927, German physicist Werner Heisenberg introduced the now famous Heisenberg's Uncertainty Principle based on his research on quantum mechanics. In general terms, it maintains that the act of measuring the velocity of a sub-atomic particle changes its position. In other words, nothing can be precisely ascertained because the act of observing changes the outcome. This is quite similar to intertextuality in which the act of decoding the text influences the ultimate meaning of that text.

In this modern world where science is often privileged over literature, it is important to realize that the two have more in common than what is apparent. As the eminent biologist Thomas Huxley once said: "Science and literature are not two things, but two sides of one thing."

Mother!

A poem by Dr. Zafar Iqbal Khattak
Lecturer, English Language Center

*Mother! Thou art relishing thy eternal nap
Yet, thy glittering eyes, I still bear in heart!
How can I be oblivious of thy balmy lap?
That in every pain proved a cozy cot!*

*Every eve I do remember thy telling tales
Of fairies, princesses and myths, my mother!
Thy reproaches were better than others' hails
Thy curses were better than others' prayer*

*Mother! I do remember that stormy night
When my body was bathing in fierce fire
Thy love cared and cooled it like morning light
And to my moaning thou played thy lovely lyre*

*Mother! I do remember that dark day too
When in our yard the air was mourning
Thy balmy lap was suffering from a fatal flu
Alas! Thy ruddy cheeks were pale in the looking*

*Thou uttered not a word to my persistent pleading
Thou were mute and muffled like a fall-flower
Thy smiling face could still hush my crying
Thy soul stayed but body took flight in a thunder
shower...!*



ENHANCING THE ACHIEVEMENTS OF ACT



Technical Support for Events

The ETC is now equipped with the high-end Roland VR-50HD Multi-Format AV Mixer. It is used to cater to special events with ease and produce professional quality outputs as well as Full HD Live streaming.

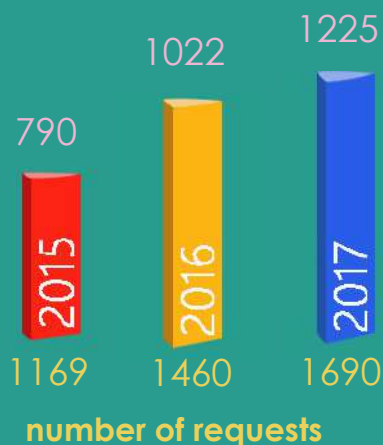


Disaster Recovery Solution (DRS)

A Disaster Recovery Solution has been applied on college campus in order to avoid faults in the main data center. DRS will help to restore services immediately, in case of any disaster in the primary data center.

ETC is currently in the process of upgrading its existing storage. This will help to improve network accessibility by using load balancing technology and making all IT services always accessible to students and staff.

completed within
10 days



Helpdesk Management

ETC helpdesk plays an important role in ACT in providing immediate support and technical assistance in troubleshooting problems with the systems, network problems, diagnosing and solving hardware or software faults. The team completes 90% of the tasks within a 10-day period.



Photography

The ETC Photography team captures special moments on campus such as Graduation Day, National Day and Open day, along with departmental and center - related activities. In 2017, the team shot videos as well for the website and social media. This year, 104 photography requests and 35 video requests were received through the Resource Management System (RMS).

RMS

35
video

104
photography

Library Services

8929
total number of books

87 new arrivals
2017

In order to inspire students to read, Library Services has been organizing a number of events successfully.

- (i) The LSS organized a Book Fair on 21 March 2017, by inviting booksellers to ACT.
- (ii) A World Book and Copyright day was held in the Library on 23 April 2017. School children participated in the various activities and were introduced to reading.
- (iii) ACT library launched a project called 'Reading Box' on college campus at many locations to encourage reading among students on 22 November 2017 (National Day 2017) .

Research Committee

ACT-ETC (Educational Technology Center - Research Committee) has taken the initiative to put in some effort towards Research and Development in the field of Information Technology under the guidance of the ETC-HOC, Ms. Zainab Al Ma'awali.

This is a start towards preparing research papers on future achievements. Team leaders in co-operation with other team members are working hard to write papers based on the latest/advanced technology and research in the field, on current topics such as The Internet of Things (IoT), Networking, Cyber Security, Software & Hardware, Library Information Science and Database Technology.



Website (Arabic) Statistics:

The Arabic website of the college is for all Arabic speakers and language enthusiasts.

Users: 23,915
Views: 115,740 | **2017**

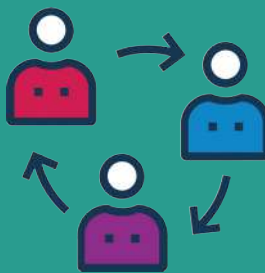
Mobile Applications:

The team, on behalf of ACT-ETC, participated in the First Stage of the 'Oman Chamber of Commerce & Industry Innovation Awards' organized by The Research Council (TRC) on 15th May 2017 on the college premises, under the title **Smart-Basma**.

A **Tailor Bird** app was introduced by ETC- ACT as an entry for the 'Alesco App Awards Competition' conducted by the Arab League Educational Cultural and Scientific Organization in May 2017.

Enhancement of Smart-Basma with Location-based Attendance System

In our continuing efforts to update the ACT mobile Apps, the new version was updated in Play Store and App Store by June 2017 with added features and a new look and feel.



Staff Development Programme (SDP):

Under the Staff Development programme, the mechanism for identifying the training needed for SDP has been created and is being implemented. Training Needs Analysis is being conducted. ETC Staff will be sent for training on IOT.

2017
Users: 193,843
Views: 738,498



Website (English) Statistics:

The college website is state of the art technology, with high definition images, cool interactive sections using easy navigation and events showcased in video format.

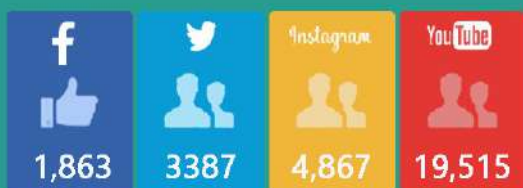
Users: 3,794
Views: 5,530 | **2017**



e-ACT Magazine Statistics:

e-ACT is the annual magazine of the college which showcases the many innovative and creative ideas of students and staff and their achievements.





Social Media Statistics:

College social media plays another important role in online presence and in communicating and interacting between the college, students and public.

e-Learning:



ACT e-Learning is one of the most accessed pages on the college website by students and staff. This year, the Moodle engine has been upgraded to the latest version, 3.3. It can now guide users step by step for multi-step processes and show statistical usage for each course. Teachers can enroll students to their courses in bulk via CSV upload and the ELC has successfully converted their placement tests to an online version.



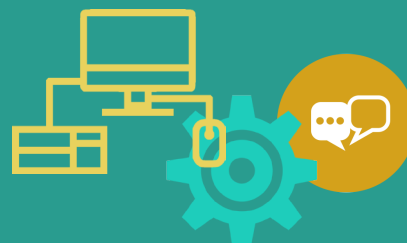
Short Term Courses and Training

ETC Short Term courses and training programmes are highly practical in nature. Around 82 students received the training in the year 2017.



ETC – Quality Assurance

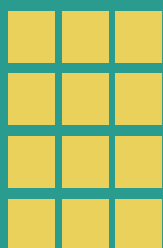
ETC has developed and implemented an ETC-QA Matrix, Review and Update ETC Policies (Printing and Photocopying Policy, Library Services Policy and Computer Services Policy). An ETC Team Action Plan has also been implemented.



Lab Support Services

Technicians are always at hand to assist students in the laboratories.

As part of upgrading, Microsoft Windows 10 was successfully deployed in computer labs. Most of system hardware is also running Core i7, which is the latest processor available in the market.































28
e-services

ACT e-Services:

ETC launched several new e-Service systems for the year 2017. One of the significant systems being deployed is the E-Forms System. It was developed to effectively serve college staff on tedious and time-consuming processes such as applying for leave, clearances and certifications. It also caters to the booking of college vehicles for official events. Other e-services being developed are a New Alumni System, a Student ID Card System, a Transferee Students' Registration System, a New Helpdesk System and many more which are in the process of development.



E-Services

 College Information Management System CIMS	 College Information Management System STAFF-CIMS	 Staff Webmail System STAFF WEBMAIL	 Student Webmail System STUDENT WEBMAIL
 ELearning System eLEARNING	 Staff Interactive Portal STAFF-iPortal	 Student Interactive Portal STUDENT-iPortal	 E Forms System eForms
 ETC Helpdesk System ETC-HELPDESK	 Admin Maintenance Helpdesk System ADMIN-HELPDESK	 Student Helpdesk System STUDENT-HELPDESK	 Studento Online Clearance System SOCS
 Library Information System LIS	 Central Photocopying System CPSS	 Resource Management System RMS	 Asset Monitoring System AMS
 Self Access Senter SAC	 QA Standard Monitoring System QA SMS	 The Research Council TRC	 Project Management System PMS
 Document Archiving System ETC DAC	 HR Information System HRIS	 ELC Grading System ELC-GS	 Alumni Registration System ARS
 Microsoft One Drive ONE DRIVE	 MS Office 365 OFFICE 365	 Student Council Election System SC-ELECTION	 Best Staff Nomination System BSNS

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FIRST PRIZE IN GCC
'ROBOTICS CHALLENGE'
COMPETITION IN QATAR
ON APRIL 29, 2017.

ACT **ZILZAL** bagged the First Prize in the final round in Qatar by defeating 10 other teams from other GCC Countries and brought glory to ACT

BAHRAIN

IEEE GCC STUDENTS AND
YOUNG PROFESSIONALS
CONGRESS 2017,
HELD IN BAHRAIN
ON 7-10 MAY, 2017

ACT robot 'ZILZAL' won Second Prize in the 'Robotics Challenge' event by competing with 10 other teams from the GCC countries.

It is a significant achievement as ACT was the only college to win a prize for Oman among all the colleges and universities that represented Oman for various events from 7-8 of May, 2017.

QATAR

A GCC 'Robotics Challenge' round was held in Oman at Sultan Qaboos University on March 20, 2017 and the teams 'ZILZAL' from ACT and 'AWASR' from Sultan Qaboos University were **qualified to represent Oman in the final round** in Qatar on April 29, 2017.



AL MUSANNA COLLEGE
OF TECHNOLOGY



OMAN

The ZILZAL Team Journey



The ZilZal Journey to Success

by The ZilZal Team

Engineering Department

It was an experience of a lifetime for us and a proud moment to represent Oman in Qatar and Bahrain for the GCC Robotics Challenge. The journey started in the month of January 2017 and the success was the outcome of nearly 4 months of consistent hard work. We worked almost all weekends in college.

We had to try different controllers like Arduino and Vex and hence, required testing and experimenting on various sensors. We finally decided to opt for Vex, owing to its longer battery life and sturdy physical structure. But we had the limitations of only 2 controllers in the department which was not sufficiently enough to manage all the 6 rounds of the competition.

The other challenge we faced was the testing ground. Apart from building the robot body and programming it, we needed to simulate the testing arena as per the specification given in the competition rules. There was no time during regular weekdays because of college work and exams. But there was good support from our supervisors and technicians who were willing to put in that extra time and effort on weekends and stayed late after college, providing us with guidance and equipment.

We had to undergo frustrations many times because of limited Vex sensors and so we had to search for the Vex supplier. We spent a lot of money buying extra components with a strong will to win the competition. The qualifying round was hosted by SQU with 5 teams from SQU, 3 teams from ACT and one from Military College. The arena in SQU was available only on the previous day and we had to make a few more modifications based on the lighting in SQU. Finally, we gave a tough fight to all other contestants and came out successfully as one among the two teams to represent Oman in the finals in Qatar.

Our Dean was overwhelmed with joy to hear the news and he extended maximum support and motivation to the team. He wanted us to go well-equipped for the finals and provided us with the extra components, sensors and sponsorship for our stay and travel. This was the first time ACT students from Engineering Department were travelling for an international competition. The ADAA, HoD and HoS and administration staff were also very supportive in all possible ways.

This support from management gave us the motivation and encouragement to go ahead with

more confidence and the responsibility to bring victory. We are thankful to all of them.

We, a team of 3 boys, 1 girl and a supervisor carried nearly 30 kg of a robotics kit all the way to Qatar. The competition organizers updated us regularly with new specifications through Whatsapp and emails. In the final round, the arena was not shown to the contestants before and hence we needed that extra planning even for the unexpected. We converted the hotel room into a project lab and rehearsed all rounds. We needed meticulous time planning on how fast to change physical structure, circuit connections and programs between rounds. All the tools were kept in place to avoid delays between rounds. Tags were attached to the wires to avoid confusion in the event of loose connection in the field.

Yaseen managed the remote control rounds, Ghareeb the sumo round and Mahmoud took charge of other autonomous rounds. Thuraya helped in charging batteries and using tools.

All the other competing teams in the final round were from the leading universities of the GCC countries. It was a tough and thrilling experience in each round and we were progressing from 3rd to 2nd and then finally reached first place in the 6th round, pushing the SQU team to the second place.

It was an amazing moment when we were declared the winners. All our hard work paid off. Our Dean was overwhelmed to hear the news and he arranged a grand welcome for us at the airport with ADAA, HoD and all section heads along with Dr. Muna Salim Al Jardani, Undersecretary of Technical and Vocational training.

Later our country celebrated the win with our pictures in social media and newspapers. The leader of the team, Ghareeb was interviewed by Oman TV on the success.

The success story didn't come to an end with that. We had to immediately warm up and get ready for another competition in GCC Congress 2017 in Bahrain organized by IEEE. This was a grand event in which the Robotics competition was one among many events like poster presentation, project competition and IEEE branch competition. Many universities represented Oman for various events but only our team from ACT got second place in the Robotics Challenge event. As ACTians we were happy and proud to bring glory to Oman again. The IEEE Oman branch felicitated us with a grand

The ACT Graduation Ceremony 2017

The prestigious and grand ACT Graduation Ceremony was held at the college campus on 30th October 2017 at 7.00 P.M.

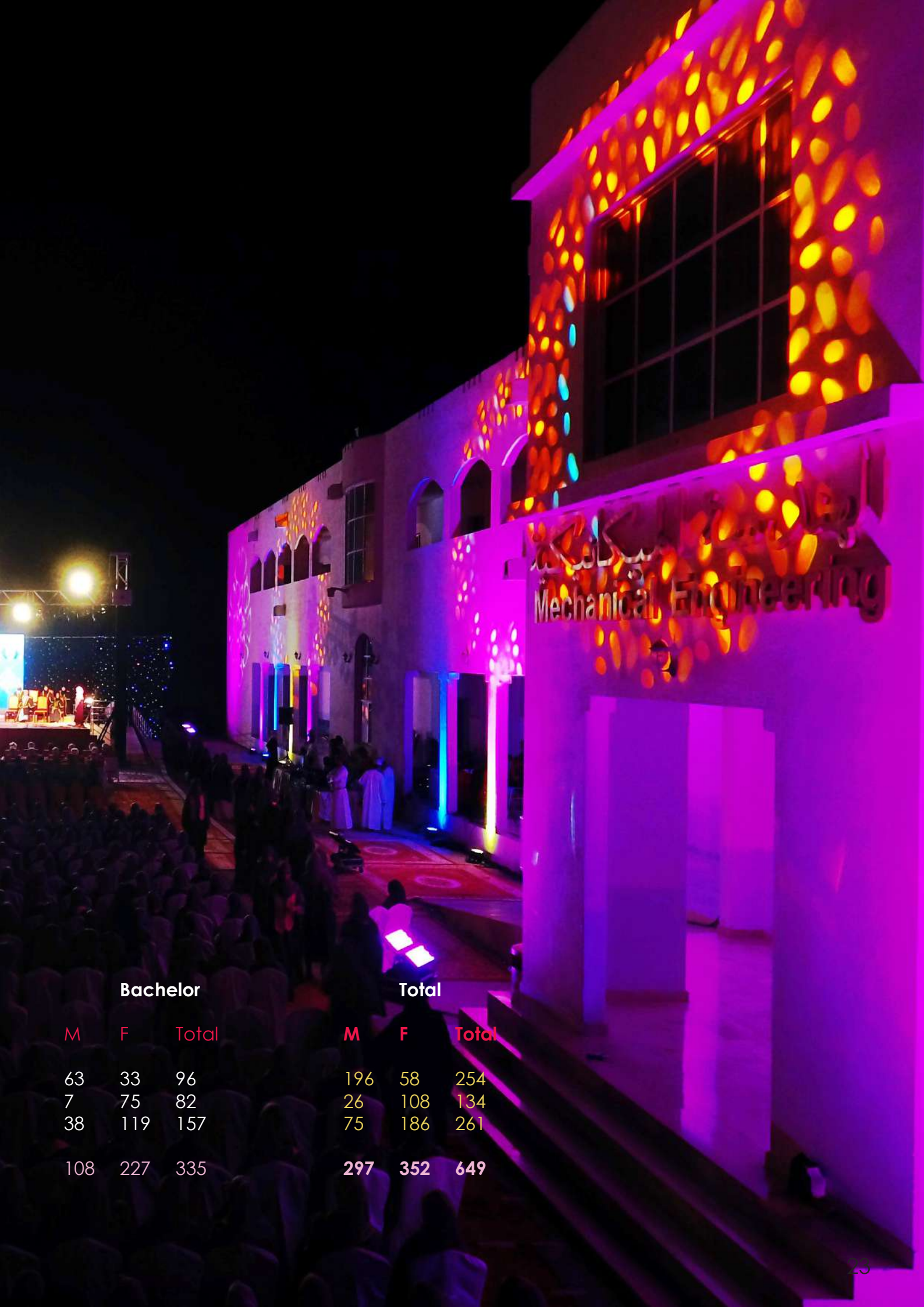
Following a speech by the College Dean, Dr. Issa Saif Mohammed Al Tubi, Chief Guest, His Excellency, Sheikh Saba'a bin Hamdan Al Saadi, Secretary General of the Higher Committee for National Day Celebrations, who also spoke on the occasion, gave away the certificates. Her Excellency, Dr. Muna bint Salim Al-Jardani, Undersecretary for the Ministry of Manpower (Technological Educational and Vocational Training) was also a special guest on the occasion.

Lively, celebratory music ended the certificate distribution with the proud graduates smiling and waving their certificates in the air for the waiting cameras. Everyone was excited to take pictures at the new Selfie wall and leave their signatures on the Signature Wall at the venue.

All in all, it was a vibrant and colourful event that brought staff, students and parents together on a pleasant October evening.



Department / Level	Diploma			Advanced Diploma		
	M	F	Total	M	F	Total
Engineering	121	21	142	12	4	16
Information Technology	19	28	47	0	5	5
Business studies	34	51	85	3	16	19
Total	174	100	274	15	25	40



الميكانيكا
Mechanical Engineering

Bachelor

Total

M	F	Total
63	33	96
7	75	82
38	119	157
108	227	335

M	F	Total
196	58	254
26	108	134
75	186	261
297	352	649



Student Honors and Messages

Mohammed Rashid Humaid Al Muqbali
Electrical Power Engineering

We must always thank and appreciate those who have helped us and those who stood by us when we needed them. And we must always tell them of our joy in their presence and our appreciation for their support. And so I would like to express my thanks and appreciation to the management and teachers of Al Musanna College of Technology for their assistance, where we achieved our first successes in science and projects.



Mahmood Mohammed Hamood Al Abri
Mechanical Engineering

It is a great honor for me to be graduated from Al Musanna College of Technology as it gave me a chance to complete my higher studies, moving from zero knowledge up to excellence. My thanks to ACT and its teachers for providing me with the suitable qualifications necessary for my professional life and for the support they gave throughout my studies. Those were the best moments I spent in my life. And I will do my best in my career to make you proud of my being an ACT student. My advice to all students is to be competitive, do your best and say always, "Nothing is impossible!" Good luck!

Mahmood Suliman Mohammed Al Tubi
Mechanical Engineering

With faltering steps and a trembling heart, my first day began in my college. The phrase 'challenge the present to draw the future' drew me. I embraced the new books with a smile, and we worked with utmost seriousness and diligence until that big day came. We started five years ago, it has been a long journey but finally it was time to graduate. We stood on the graduation platform and we were proud of our excellence and progress, but this moment of farewell is one of the most difficult moments I have experienced. Sometimes life presents beautiful gifts and one such beautiful gift has been studying in ACT.



Khulood Ali Nasser Al Amri
Internet and E-Security

If you have a goal, you can achieve it even if there are difficulties. I had studied in Al Musanna College of Technology. It was very interesting to study there. I got so many benefits when I was studying there, especially from my specialization. Even when I faced many difficulties, I continued to follow my goals. I hoped to complete my masters and become one of the staff members of ACT. Finally, all the tiredness vanished in one moment when it was graduation time. I had a special graduation in ACT because I was very happy to be one of the top graduates and receive the certificate. All the best for all students in ACT!

Naima Aamer Ali Al Abri
Accounting

Success needs a renewal of your goals and dreams and then striving to achieve them while facing all difficulties.



Afrahi Rashid Said Al-Ghadani
Accounting

The value of success never comes without an effort. It was a wonderful journey which was full of feeling and amazing experiences. ACT always provides the best for students so they have better academic education.

Best Paper Award - First Prize

'A Study on Performance of Selected Mutual Funds in Oman' won the Best Paper award under the theme 'Economic Growth in Oman Oil Crisis: A Diversified Strategic Approach'. It was presented by Ms. Jayashree, Faculty, Business Studies Department at Shinas College of Technology on 17 April 2017. The paper was published in the International Journal of Business and Administration Research, SLAA Publications Pvt. Ltd. Bangalore. Online - ISSN 2347-856X Review Impact Factor: 4.729.



The paper investigates the performance of open-ended and growth-oriented equity schemes for the period from January 2016 to December 2016 during a transition period in economy. The returns of the selected mutual funds schemes are calculated using available Daily closing NAV of the fund schemes. The data is collected from the websites of Muscat Securities market and the average return for each month is computed. The risk on returns is computed using Sharpe's ratio and Treynor's ratio to understand the intensity of the fund affected by systematic risk, volatility of the fund and market risk. The study clearly shows that Vision Investment Services GCC Fund and Oryx Fund have been very efficiently managed by their fund managers who are able to understand and analyze Oman and other GCC markets very well. The study reveals that the Sharpe's

ratio for twelve months is recorded and it is negative for few months. It is also noticeable that Oryx Fund manages security risk more efficiently than the Vision Investment fund GCC and Majan fund. The average Treynor's ratio of Vision Investment Fund is efficient in handling market risk better than Oryx and Majan fund. Based on the analysis of the mutual funds in Oman with respect to the performance of the selected mutual funds, the researchers are able to conclude that Mutual Funds in Oman still are one of the most viable options for the Omani residents and for international investors who wish to invest their funds in these avenues.

First prize for Poster Presentation

Ms. Ohood Hamad Suliman Al Subhi and Ms. Sumaiya Hilal Salim Al Kindi won First Prize for their Poster Presentation entitled '**A study of Foreign Direct Investment in Oman - Opportunities and Challenges**' held in Shinas College Technology on 17 May 2017.



"We feel proud and happy to have participated in the Shinas Management Seminar for Poster Presentation at SHCT. We would like to thank our Mentor, Mr. Balerao Shiva Kumar, who motivated and guided us to present our poster. It was appreciated by the Jury Members for accurately representing the current scenario. It was a great learning experience for us".

INDUSTRIAL VISIT, Vale Company, Sohar

By Fayza Khalfan Mohammed Al Khanbashi

Student, Business Studies Department

The aim of the Industrial Visit was to understand the production process by observing the operations and processes of Vale Company.

Communications Specialist Mr. Yasir Al Shihi gave a general overview of Vale Oman. Vale company established its Middle East office in Oman in December 2007. The company converts iron ore into useful pellets.



"We toured the harbor and saw the process of making pellets. We saw big machines such as conveyor belts, ships, crane and other equipment. Mr.Yasir Al Shihi from Vale, Oman explained the operations clearly. The company protects the environment by maintaining a clean ISO 14000 and a pollution-free environment."



BS Department Wins Best FURAP Research Project Award

The Research project 'A Study on Employer's Expectations and Skill gaps among Graduates of Colleges of Technology' won the Best FURAP Research Project Award under the Education and Human Resources Sector. The award ceremony was held during the 4th Annual Research Forum 2017 on 10 December 2017. The ceremony was presided over by H.E. Dr. Rawiya Bint Saud Al Busaidi, Minister of Higher Education.

The College would like to congratulate the following

Accounting students (along with their mentor, Ms. Shagufta M. Farroq, BS Faculty):

Abeer Abdulkarim Amitan Al Balushi, Afrah Rashid Said Al Ghadani and Amal Khalid Hamood Al Salehi.

The Annual Research Forum 2017 was held to felicitate the winners of the **National Research Award and FURAP**.

The function was presided over by **H. E. Dr Rawiyah bint Saud al Busaidiyah**, Minister of Higher Education. Many eminent personalities from industry and academia also graced the prestigious award ceremony.



Global Entrepreneurship Week (GEW) 2017

By Dr. Shantanu Shekhar
Lecturer, Business Studies

The Department of Business Studies organized a Global Entrepreneurship Week (GEW) 2017 with the purpose of acquainting students with the exciting world of entrepreneurship.

The GEW commenced on 14th November 2017 with the workshop 'Innovation Camp', conducted by INJAZ Oman. It was attended by students specializing in entrepreneurship this year. The workshop focused on generating creativity in students. The workshop facilitator, Mr. Sulaiman Al Mahrooqi, organized certain group activities, building on the creative and innovative ideas of the students, including activities for team skills and brain storming.

On 15th November 2017, the GEW made students aware of the hard work put in by the new age of entrepreneurs. Several budding young Omani student entrepreneurs exhibited their new business ventures at the forum. This was followed up with a presentation by Mr. Abdullah Al Barashdi of SMEF Oman, educating students about the importance of taking up entrepreneurship as a career, and its contribution to economic development. Mr. Abdullah also briefed students about the various funding schemes provided by SMEF to promote entrepreneurship ventures.

On becoming an Entrepreneur

By Elena Encomienda Pascual
Lecturer & QA Head, Business Studies

Many of us find ourselves daydreaming of owning a business. Perhaps we are motivated that we will be the boss and will make more money. Regardless of the reason, everybody wants to own a business. However, reality kicks in when we discover the risks involved, lack of resources, etc. and then, we remain daydreamers.

Entrepreneurship requires a special kind of a person; someone who has the interest, knowledge and who is willing to risk it all for the fulfillment of a dream. After all, in business, risk is a constant companion. Entrepreneurs should be disciplined risk takers, that is, educated in the area of their interest and with every move calculated.

To be a successful entrepreneur, we can focus on enterprises that continue to stimulate the economy. Also, read, read and read, it helps.

A flourishing start-up scene has taken that spirit of entrepreneurship into Oman, with a full appetite for new ideas and innovation and a consumer market ready to embrace new products. So, dare to be your own boss!

ACT Engineering students win

First Prize

in Finals of GCC Robotics Challenge Qatar 2017

The ZILZAL team was guided and coached by **Ms. S.V.Tresa Sangeetha** (Prime Mentor), Instructor **Mr. Kanagaraj** and **Ms. Rahila N Gadi** (Supporting Mentor).

ACT ZILZAL team consisted of the following student members:

- Yaseen Ghabish Al Misheifri
- Mahmood Said Al Falahi
- Thuraya Salim Al Sulaimi
- Ghareeb Jameel Al Muhairzi
- Qais Said Al Buwaiqi

"An indescribable feeling, the moment when the results were announced was unforgettable! We are proud to raise Oman's flag and our participation shall continue".

Ghareeb Jameel Obaid Al Muhairzi.
ACT robot team leader 'ZILZAL'



The GCC (Gulf Cooperation Council) Robotics Competition

is an annual event aimed at encouraging undergraduate students and young professionals across the GCC Countries to build an innovative robust robot, utilizing their academic knowledge and technical skills. The event is sponsored and organized by IET and IEEE which are the largest professional engineering bodies.

Local rounds were held in each country. In Oman, it was held at Sultan Qaboos University on March 20, 2017.

ACT's robot team ZILZAL won Second prize, and qualified with 'AWASR' from Sultan Qaboos University to represent Oman in the final round in Qatar on 29 April.

ACT's robot 'ZILZAL' won First Prize

in the final round by competing with 10 other teams and brought glory to ACT and Oman. A grand reception was arranged at the airport for the winning team. The team was received by Her Excellency Dr. Mona Salem Al Jardani, Under Secretary for Technological Education and Vocational Training, Ministry of Manpower in the presence of our Dean Dr. Issa Saif Mohammed Al Tubi, the Assistant Dean, Dr. Ahmed Ali Ahmed Al Shahri, Mr. Abdul Hamid Al-Hinai (HOD-Engineering), Dr. Vijayaraj (HOS-Mechanical Section) and Mr. Mohammad Sajid Ali (HOS-Electrical Section).

Second Omani University Robotics Competition

The **ACT Team ZILZAL won Third Prize** in the Second Omani University Robotics Competition held in Sultan Qaboos University on April 23 2017. The competition had a theme (Vex 2017 Star Struck) in which each robot scored points by throwing stars and cubes in opponent zones and the robot must be hanged on the hanging bar at the end.

The team was guided and coached by Ms. S.V.Tresa Sangeetha (Prime Mentor), Instructors Mr. Kanagaraj and Mr. Emanuel .O. Rances.



IEEE GCC Students and Young Professionals Congress 2017 Bahrain

Following were the students who represented ACT in the GCC SYP Congress:

- Yaseen Ghabish Ghsham Al Misheifri
- Mahmood Said Juma Al Falahi
- Ghareeb Jameel Obaid Al Muhairzi
- Amira Sultan Al Hajri
- Ammar Yousef Al Farsi
- Ali Khamis Al Kharusi
- Mazna Said Al Saidi
- AbdulWahab Suliaman Al Kazaruni

The team was guided and coached by **Ms. S.V.Tresa Sangeetha**, Prime Mentor, Instructor **Mr. Kanagaraj**, **Ms. Rahila N Gadi**, Supporting Mentor and **Ms. Sindhu S. Nair**.



The GCC Students and Young Professionals Congress (SYP Congress) is a biennial event for competitions in diverse technical fields and soft skills. In SYP Congress 2017, held in Bahrain, the main focus was on innovation, technical feasibility, efficiency and assessing creativity of the participants from various GCC

countries.

A total of five teams from Al Musanna College of Technology participated in various categories such as TECHNOLOGY AND INNOVATION COMPETITION, BEST IEEE STUDENT BRANCH AWARD and ROBOTICS CHALLENGE.

ACT was the only college from the Sultanate on the winning podium and it secured Second Prize in the Robotics Challenge competition.

ACT 'ZILZAL' team once again brought accolades to ACT and Oman.

Numerous industrial visits were arranged for different student levels during the year 2017, as follows:

- Oman Oil Refineries and Petroleum Industries Company (ORPIC).
- National Aluminium Products Company SAOG (NAPCO).
- Suez - Tractebel Operation and Maintenance Oman LLC. (STOMO).
- Al Ghubrah Power & Desalination Company SAOC.
- Amiantit Oman Co. LLC.
- Mazoon Electricity Company SAOC (MZEC).
- Public Authority for Civil Aviation (PACA).
- Telecommunications Regulatory Authority (TRA).
- Horizon Rapidworks Industrial Development Company (Concrete Pre-Fabrication Plant) - Sohar , Oman.
- Musanna Airbase – Oman Royal Air force.
- The Eco House of Higher College of Technology

Seminars and Workshops

- 'How to memorize like a genius' - Workshop organized by Engineering Society of ACT on 24 January 2017 by Mr. Jun Vincent Suela, Architectural Instructor
- 'Planning for a successful life by setting effective goals' on 31 January, 2017 by Ms. Mai Mubarak Thani Al-Saadi.
- 'Online Engineering Quiz Competition' organized by Engineering Society on 21 March, 2017

□ Civil and Architectural Engineering Section featured the 'Best Architectural Scale-Modeler in Architectural Workshop' during the Third Semester and the exhibit ran from July 12 - September 7, 2017.



The Scale-Model Projects of Architectural Workshop

- 'Artificial Plant Leaf Project' by Ms. Mai Mobark Thani Al Sadi won the Second Place at the Oman Chamber of Commerce and Industry (OCCI) Innovation Awards, organized jointly by The Research Council (TRC) and (OCCI). It qualified for the third stage of awarding.
- 'Enhanced Oil Recovery' Seminar on Monday, 9 October, 2017 by Mr. Ahmed Al Jahdhami, GM and Co-Owner of Platinum Technical Services.
- 'Introduction to Architecture' Seminar organized by TESACT, 17 October 2017, presented by Ms.

Rayyan Said Al Qasmi, a student of Civil and Architectural Engineering Section

- Presentation on 'Process of Oil Gathering', Tuesday 31 October, 2017 by Mr. Khalid Salim Al Abri, Production Engineer, PDO
- A short term course on 'Image Processing and Filtering Technique using MATLAB 2017a' conducted by Ms. Sindhu. S. Nair, 16 - 23 October 2017.
- A short term course, 22 - 26 October 2017, on 'Design of Control and Monitoring System using Arduino Microcontroller interfaced with Sensors, NI LabVIEW and Embedded Wireless Modules' conducted by Ms. Analene Montesines Nagayo, along with support facilitators, Ms. Bindu P. Vikraman and Ms. Rahila Begum Gadi.
- A presentation on 'Course Advising in Student Course Projection System' conducted on 7 November 2017, by a Registration team to highlight the importance of course advising, projections and rules and regulations of curriculum for department advisors.



- Workshop on 'Car Engine Mechanism and Troubleshooting' on November 14, 2017, organized by the Engineering Society (TESACT) and presented by Mr. Sultan Saleem Juma Al Balushi, student of B. Tech Mechanical Engineering.

"The training programmes which I attended in the Engineering Department, Al Musanna College of Technology, were very useful and beneficial in my current job. Moreover, those trainings helped me to confidently face interviews. I recommend the programme to all students and advise them to take these training opportunities seriously because they are going to help them in their future career"



Nawaf Mubarak Jamil Al Musheifri
Bachelor in Mechanical Engineering
Mechanical Engineer, Oman Oil Company



Faculty-mentored Undergraduate Research Award Program (FURAP)

The following projects were selected as winning projects recently:

1. 'A Smart Solar-powered Waste Segregation System with Integrated Self-driving Robot Collector towards Environmental Sustainability in School Campus'

- Environmental and Biological Resources Sector.

by Ms. Analene Nagayo, Faculty Mentor.

Team members:

- Mazna Said Hamdan Al Saidi
- Ammar Yousuf Al Farsi
- Ali Khamis Ali Al Kharusi
- Omar Rashid Al Maqbali
- Ammar Said Al Hosni
- Raja Muhammed Al Rawahi
- Tasnim Khasif Al Mughaiwzi



2. 'Experimental Investigation of Date Palm Leaf Fiber-Reinforced Recycled Polyethylene Terephthalate Composites'

-Energy and Industry Sector.

by Mr. Khadersab Rajewala, Faculty Mentor

Team members:

- Mohammed Darwish Mohammed Al Khuzairy
- Salim Suliman Fadhel Al Farsi
- Emad Ramadhan Mubarak Al-Harrasi



Interview with student Mazna Said Hamdan Al Saidi:

What is your TRC-FURAP project all about?

Ans: This multidisciplinary project presents the engineering methods and techniques involved in the design, construction, and implementation of a Smart Solar-Powered Solid Waste Segregation System (SWSS) integrated with a Trash Collector Robot (TCR).

What is the significance of your project for the society of Oman?

Ans: The project exhibits the use of modern engineering technology in waste management to keep a clean and green campus environment, with a minimum of human intervention, for sanitation and health safety.

What are the things you learned from this project? What is your learning experience?

Ans: I learned how to program the VEX Clawbot to perform line following and pick and color detection tasks with the assistance of our mentors.

"The FURAP project gave us the opportunity to explore the field of research and its importance in the area of advanced smart composite material. By making maximum use of the excellent laboratory facilities, we completed the project to the level of satisfaction of TRC and could secure first place in the Energy and Industry Sector. We express our gratitude for the extraordinary support from the Department of Engineering, and the TRC as well. These types of opportunities set a culture of research among the students."

Mohammed Darwish Mohammed Ali Al Khuzairy
Bachelor in Mechanical Engineering

@ Engineering

Higher Studies:

The Department of Engineering is proud of its staff members and their academic progress which is of special credit to the department and the student community in general.



Dr. Jothibabu
Konidhala



Dr. Ankur Goel



Ms. Mai
Mubarak Al
Saadi



Dr. Smitha
Krishna Warriar

Currently in this Academic Year 2017/2018, there are three running FURAP projects under the supervision of:

- Dr. Santhosh S.
- Mr. Premanand K.P
- Mrs. Bindu P.V

Upcoming project installations in the Department of Engineering:

- Through Nafath Renewable Energy L.L.C, there will be an outdoor Energy lab installed.
- Through ETC, an Automation Studio software will be installed for Mechanical Engineering students



The Department of Engineering & IEEE Student Branch of ACT proudly organized a felicitation function for the winners of the various Robotic Challenge competitions held in Qatar and Bahrain, with the association of IEEE Oman Section on 23 May 2017 at College Auditorium. The occasion was graced by Honorable Chief Guest, Dr. Amer Al Hinai, Chairperson, IEEE Oman Section.

Prizes and certificates were distributed to the winners and their mentors by the Honorable chief guest along with Honorable Dean, Dr. Issa Saif Al Tubi, Guest Dr. Ahmed Al Maashari, Publicity Officer, IEEE Oman Section, Head of the Department, Engineering Mr. Abdul Hamid Al Hinai, Mr. Ammar, Edutech L.L.C, Middle East and Head of Section of Electrical and Electronics Mr. Mohammed Sajid Ali.



"My study tenure in ACT helped me to achieve my goal to be an engineer contributing to the progress of the country. It is the place where I have accomplished the necessary skills and knowledge which are required for my professional growth. This was possible only because of the support of professional academic faculty and the administrative team. ACT taught me that "we can achieve more, if we accept challenges". I am very grateful to all the college staff for their hard work and for their role in preparing us to become productive engineers in our role to build the country."



Khalid Salim Al Abri
Production Engineer PDO

RESEARCH

& PUBLICATIONS

• **'Soil impact and radiation dose to native plants in forest ecosystem'** by Dr. P.K.Manigandan in the area of Environmental Radioactivity, published in Agroforestry System-2017.

• **'Soil depth profiles and radiological assessment of natural radionuclides in forest ecosystem'** by Dr. P.K.Manigandan in the area of Environmental Radioactivity, published in Radiochimica Acta-2017, 105(6):505-512.

• **'Comparative Study of Conventional and Optimization Methods for Maximum Power Tracking in Photovoltaic Applications'** by Dr.M.Vanitha in the area of Renewable Energy published in the Asian Journal of Research in Social Sciences and Humanities.

• **'Experimental Analysis of Liquid Insulating Medium for High Voltage Transformers'** by Dr. M.Vanitha in the area of Power System Components, published in the Asian Journal of Research in Social Sciences and Humanities.

• **'Effectual Particle Swarm Optimization Algorithm for the Solution of Non-Convex Economic Load Dispatch Problem'** by Dr.M.Vanitha in the area of Power Generation, published in the International Conference on Intelligent and Efficient Electrical Systems.

• **'An Automated Solar-Powered Aquaponics System towards Agricultural Sustainability in the Sultanate of Oman'** by Nagayo, A. M., Mendoza, C., Vega, E., Al Izki, R. and Jamisola, R. in the area of Automation and Control, Wireless Communication, Renewable Energy, Agricultural Engineering, published in Proc. 2017 IEEE International Conference on Smart Grid and Smart Cities, July 23-26, 2017, Singapore ISBN: 978-1-5386-0504-2

• **'A Survey on Management of Upstream Land Use and its Impact on Downstream Water Quality**

Parameters' Patella, W., Jamisola, R., Letshwenyo, M. and Nagayo, A.M. in the area of Environmental Engineering and Sustainability, published in the Journal of Computational Innovations and Engineering Applications 2(1), July 2017. ISSN: 2507-9174

• **'Cloud-based Wireless Monitoring System and Control of a Smart Solar-Powered Aquaponics Greenhouse to promote Sustainable Agriculture and Fishery in an Arid Region'** Nagayo, A.M. and Jamisola, R. in the area of Control and Automation, Wireless Communication, IoT, Renewal Energy, Agricultural Engineering, published in Proc. BIUST Research and innovation Symposium 2017, June 12-14, 2017, Palapye, Botswana. ISBN: 978-99968-0-608-7

• **'Adaptive Fuzzy High-Order Super-Twisting Sliding Mode Controller for Uncertain Robotic Manipulator'** by Ankur Goel in the area of Nonlinear control, Robotic Manipulator, published in the Journal of Intelligent System (Scopus Indexed) DeGruyter.

• **'MIMO Uncertain Nonlinear System Control via Adaptive High-Order Super Twisting Sliding Mode and its Application to Robotic Manipulator'** by Ankur Goel in the area of Nonlinear Control, Robotic Manipulator, published in Springer.

• **'Experimental Investigations on fluoride removal from water using nanoalumina-carbon nanotubes blend'** By Dr. Smitha,K & Thampi, S.G. in the area of Environmental Engineering, published in The Scientific Research (<http://doi.org/10.4236/jwarp.2017.97050>).

• **'Efficacy of Carbon Nanotubes for Water Purification'** by Dr. Smitha Krishna Warriar in the area of Environmental Engineering, published in the Oman Research Council (<https://www.waljatcollege.edu.om/downloads/SouvenirICIEM-2016.pdf>).



'iTech Marathon Event' at Ibri College of Technology

The duo, Ibrahim Ali Harib Al Balushi and Balaqis Khalifa Khamis Al Affari, won First Prize in the Networking Security Designing event. The Math contest saw the partnership of Maiyah Ahmed Said Al Bahri and Dema Ali Mohanna Al Houssani, who excelled and won a Special Prize in the event.

'ITEX 2017 Event' at Nizwa College of Technology

Abdulaziz Salim Hashil Al Hkmani, Khamis Salem Khamis Al Habsi, Muaath Ahmed Al Balushi and Abdullah Ahmed Al Kharosi won the First Prize in the Student Project Competition. The Web Design & Development contest saw the partnership of Marwa Ali Al Khusaibi and Haitham Nasser Halifa Said Al Abri, who excelled and won Second Prize in the event. In the PC Assembly & Troubleshooting contest, Waleed Abdallah Nasser Al Housni won Second Prize.

'Students Forum 2017' at Shinas College of Technology

Maiyah Ahmed Said Al Bahri clinched the First Prize in the 'Programming in Java' Contest.

'REVERA 2017' at Waljat College of Applied Sciences

Sarah Said Abdullah Al Khatri, Siham Nasser Rashid Al Hatmi and Ibtisaam Said Rashid Al Baqlali won Third Prize in Android App Development. The duo, Marwa Ali Humaid Al Khusaibi and Haitham Nasser Khalifa Al Abri, won Third Prize in the Web Designing Competition.

'InvenT-2017' at Majan College

Shahab Hamed Abdullah Al Hakmani and Khalid Salim Mohammed Al-Jahwari won First Prize in the 'Build a Network' contest.

The Spirit of Competition

By Maiyah Ahmed Said Al Bahri

Student, Information Technology

Competition means different things to different people—for some it is fun, for others it is a way to prove their superiority. Some might find competition silly, but the fact is that we are a competitive species in virtually everything we do. Competition in an academic context provides unique opportunities and benefits to the participants. I got the opportunity to participate in many competitions held at other colleges. I found that these competitions benefitted me by boosting my own confidence.

I realized that taking part in extracurricular activities did not adversely affect my academics but actually helped my morale as I got to represent my college. It was inspiring to collaborate with students from other colleges. It improved my self-confidence. I realized that being patient, focused and not rushing into making a decision usually lead to a very satisfying outcome.

Victory can be achieved through hard work, dedication, teamwork and cooperation. But participation is the only achievement that I cherish; winning is just an added bonus!

Student Research in 2017

Student research papers titled 'A Study on Anonymous Methods to Prevent SQL Injection Attacks' by Musheerah Nasser Sulaim Al Khamisi, 'A typical Hierarchical Routing Protocol for Wireless Sensor Networks to Design Cross-layer Routing Protocols in WSNs' by Alaa Ahmed Al Ajm and 'Multiple Sink Nodes for Increasing Energy Efficiency without affecting Overheat in Wireless Sensor Networks' by Asma Saif Al Salhi were selected for presentation at the student research conference '**AOUSRC-2017- Making a Difference**' at Arab Open University.

The first two students presented their papers at the conference on 24th May 2017. Musheerah Al Khamisi's paper was selected as the best paper. She was applauded for her brilliant work, both for the writing and the impressive presentation.

NetRiders Competition

By Mr. Randy Catacutan

Lecturer, Information Technology

The NetRiders competition not only provides students with hands-on practice and experience in a competitive environment but also gives them a chance to test their strengths and weaknesses, showcase their knowledge, create interactive networking skills as well as make new friendships across the world. And for instructors, this is a great opportunity to lead students and showcase their teaching skills as well.¹

Over the past few years, students from ACT have participated and won laurels in the different levels of the competition:

¹ <http://www.academynetriders.com/index.php>

	2014	2015	2016	2017
CCNA	Final Round	Final Round	2nd Round	2nd Round
CCENT 1	No Entry	2nd Round	2nd Round	2nd Round
T ESSENTIALS	2nd Round	Final Round 3rd Place	2nd Round	2nd Round

The competition is offered to students currently or recently enrolled in a Cisco Networking Academy course.



INSPIRA @ ACT: INTRANET SPACE FOR IT RESOURCES AND ARCHIVES

Last year, the IT department initiated the process of developing an Intranet space in ACT's SharePoint. INSPIRA is now a repository for all the required documents and course resources for the IT department. Any document pertaining to department committees and coordination is archived for easy reference.

Lauded by the QD team for this effort, the department is now motivated to explore the possibilities of expanding INSPIRA to a more collaborative experience. The Intranet enables one to instantly access and share information with colleagues and gain insights into the working of other sections within the department. This brings the department closer together. Information can also be archived and accessed at any time.

Redefining Education: How Competitions Enhance Learning

By Ms. Khoula Ali Al Saadi

Head of Section - Information Technology

Competition may be one of the most contentious and misunderstood topics in education. Competitions in education have been hard to access because there is so much misinformation and seemingly conflicting research studies on the topic. The Institute of Competition Sciences uses its expertise and develops best practices in competition science to ensure that it will be well received by educators, students and members of the public. Thus, more and more programmes are beginning to understand how to structure the rules and processes of the competition to maximize Net Collaborative Impact. Discussed below are a selection of benefits from educational competitions that were deemed highly potent for students:

Ameliorating Collaboration and Teamwork

The most common concern with regard to educational competitions is the 'Competition vs. Collaboration' debate; however, well-structured, consciously-designed competitions actually foster collaboration and teamwork. The fact that they know other teams are aiming to achieve the same goals, goes a long way in motivating the teams to become more cohesive, and better collaborators.

Supplement Social and Emotional Learning.

Social and Emotional Learning enables students to effectively apply the knowledge, attitudes, and acquired skills to understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships. Competitions help students gain better understanding of how to deal with conflicting opinions and ideas.

Establishing Positive Peer Comparisons.

Educational competitions, when well-designed, can positively affect students move towards these beneficial peer comparisons and place them in a similar high regard along with other social status comparisons.

Nourish Academic Self-Concept.

Students needs to be made aware of the basic knowledge of how to mitigate the negative impacts of not winning a competition and highlight the participation. Celebrating their participation, highlighting the effort that took to get them there and showcasing how the team enjoyed every minute of the challenge is a good way to establish Self Concept.

Raise Mental Toughness.

Persistence, resiliency, and grit are all components of Mental Toughness. These valuable real-world skills come in handy across every area of our careers and lives. Competitions ensure that students will not be put in situations like the stress of competitive situations for the first time when they jump into their jobs.

Improving Risk Analysis and Challenge-based-learning.

Competitions enable students to manage subjectivity while gauging and evaluating risks. Challenge-Based Learning (CBL) is a framework designed to improve learning and organizational behavior around authentic learning experiences that encourage learners to leverage the technology they use in their daily lives.

Building a Culture of Continuous Learning with MOOCs

By Dr J Lenin Fernando

Head of Section - Networking

To foster the changing curriculum and promote lifelong learning, the IT department has initiated steps to cope with the constantly changing technological innovation and has encouraged its staff members to enrol for MOOCs. A massive open online course (MOOC) is a model for delivering learning content online to any person who wants to take a course, with no limit on attendance. In the few months of the initiative, the department has seen various staff completing the courses that could have massive educational benefits and career benefits.

Mr. Mohammed Abdul Habeeb completed his Oracle Database 11 g Administrator Certified Professional OCP Certification, Mr Randy Catacutan completed courses on IoT and cyber security under CISCO. Dr. Rachappa Jopate finished a course on Introduction to Cloud Computing. Ms. Tamilarasi completed courses on diverse topics like Cloud computing, HTML and JavaScript, Project Management and Transact SQL. Mr. Imran Qureshi advanced his knowledge on Hadoop, Arduino and Microcontroller Programming.

Ms. Rana Tarannum completed advanced courses on Tableau 10. Dr. Divyajyothi covered courses on HTML and JavaScript while Ms. Sajayasree obtained training on how to become better learners. Mr. Syed Mohammed Shavalliuddin completed several courses on Algebra and even learnt Arabic online. All the courses could be accessed at edx, Udemy , netacad and Coursera.

If you are currently on the lookout for ways to develop important transferrable skills like subject specific information, communication and time management, or even lifelong learning skills like critical thinking that will help you become a better learner, MOOCs are worth your time.

Sharing Experiences – Reflections on my Recent Achievement

By Dr Rachappa Jopate

Lecturer, Information Technology

I always had the ambition of doing my doctorate, as I was fortunate to be surrounded by family and friends who were scholars and motivators. My journey started with a knowledge of research to some extent. When I got enrolled for the PhD, I had the opportunity to meet researchers from various disciplines, interact with them and share ideas. Continuous training on research skills showed the practical side of research and gave a push in the direction of balancing academic rigor and personal life. It also gave me a chance to set the stage for my own ideas, at the same time viewing my research from another person's perspective. These communications enhanced my knowledge for setting up the focus on the objectives to be achieved. In other words, dedication, understanding capacity, uncompromising efforts, reading numerous journals and most importantly patience goes a long way in shaping your personality and giving you a new perspective of your work.

Over the years, the colleges of technologies in the Sultanate have been promoting the culture of creativity and innovation through various funded projects, and continuously motivating students towards research-based learning. The objective is to benefit our student community, to inculcate a research outlook, to motivate them to publish papers in educational conferences/journals, to write or edit a book, to contribute chapters to someone's book and to develop cognitive abilities in order to become critical thinkers. I believe that conducting research or receiving a PhD degree is not about how smart you are, it's about your determination, preparedness, discipline, and ability to continue the course even when things are not working as expected. It is not only a process of discovering knowledge but also a battleground that can raise one's character and learning skills.

***"Optimism is the faith that leads to achievement.
Nothing can be done without hope and confidence."
- Helen Keller***

About Mathematics Section

The Mathematics Section of the Department of IT, always strives to enhance the mathematical skills of its students. Its Math Help Center keeps an eye on the slow learners and tries hard to improve their mathematical skills by involving their imagination and inventiveness. It has a patron of dedicated staff; focusing on SCL and TOT (Technologically-Oriented Teaching).



Dr. S. Dheva Rajan

Editorial board member and reviewer of 14 journals. He has contributed 14 research papers to the math family. Has won 7 awards and published 8 books. He was honoured with a Faraday award from a university.



Dr. M. P. Kulandaivel

Being an active editor of the International Journal of Applied Graph Theory, he has done extensive work in Graph theory. He is also the editorial board member, reviewer and international advisory board member of several journals.



Dr. Prabhu Natarajan

Chief Guest for UGC Sponsored International Workshop on 'Pure and Applied Mathematics', delivered the guest lecture on the topic 'Fractal Geometry and Golden Ratio'. His research paper on Wavelets, entitled 'Wavelet-Based Feature Extraction Techniques of Hyperspectral Data' in the Journal of Indian Society of Remote Sensing (SCI Indexed), Springer Group, got the 'Best Paper Publication Award' of 2017.



Dr. P. Selvagopal

Editor-in-Chief of 'International Journal of Mathematics and Soft Computing (ISSN Print: 2249-3328, Online: 2319 - 5215)', a biannual journal recognized by the University Grant Commission of India and indexed in various database. He has authored 7 books and conducted fruitful researches recognized by several organizations.

Oman Team Wins 2nd Place at the 2017 Asian-Pacific University Football & Cheerleading Championship in China on 25th September 2017.



Iran and Oman were the two best teams playing Football in this Championship and were quite competitive. The match was kicked off by Oman. (ref: <http://www.ausf.org>)

His Excellency, Dr. Abdullah bin Mohammed Al Sarmi, Undersecretary of Higher Education met with the Omani delegation that participated in the Asian Football League Championships.



Two ACT students who were a part of the team: Hamad Al Fadaily, Business Studies Department; Mohammed Al Harasi, Engineering Department accompanied by Mr. Taleb Hamood Al Buloshi, Student Affairs

Ranking
Champion
Runner-up
3rd Place
4th Place

Team
Iran
Oman
Kazakhstan
China



Staff Football Championship

The finals of the Staff Football Championship was held on Tuesday, March 7, 2017 at ACT under the patronage of Dr. Ahmed Ali Ahmed Al Shahri, Assistant Dean for Academic Affairs.

The match was between the team of Educational Technology Center and the Information Technology department and the team of Students Affairs and Engineering Department. It ended with the victory of



the latter with a score of 4 against 1, where the first half ended with a score of 1 to 0. The team of Student Affairs and Engineering were crowned as champions.

Dr. Ahmed Ali Ahmed Al Shahri presented the awards to the champions and congratulated them on their win.

ACT won the football championship for 2017 for the institutions of higher education, organized by Sultan Qaboos University in the month of April. The occasion was graced by Sheikh Dr. Khalid Al-Hinai, Advisor to the Vice-Chancellor of Sultan Qaboos University for Environmental Affairs and Community Service. Our college team was one of the strongest competitors among all the teams. We won the championship with a score of 5/4 in the finals with SQU team. In the first match, ACT scored 6/0 against Oman Tourism College and in the second match, ACT won with a score of 1/0 against the Majan University college team. In the semifinals, ACT won the match against Sohar University team with a score of 1/0 to enter the finals.

ACT Crowned Winner of Football Championship for Institutions of Higher Education, Oman



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