



CENTRE FOR ENGINEERING EDUCATION

Activities in 2020



Rigorous Research in STEM and Engineering Education Workshop Series Part 3

UTM Centre for Engineering Education (CEE) in collaboration with the Society of Engineering Education Malaysia (SEEM) had conducted *Rigorous Research in STEM and Engineering Education Workshop Series Part 3: Data analysis in engineering and STEM education research* on the 30th, 31st January and 1st February 2020 at UTM Johor Bahru. 11 participants had joined the workshop.

These workshops aimed to support engineering and STEM educators in learning and applying rigorous educational research. In this workshop, the participants were guided to analyse the data that they have collected after the second workshop. Both quantitative and qualitative data analysis techniques were introduced with hands-on activities to further grasp the techniques. The participants were asked to analyse their own data during the workshop so they can acquire help from the trainers and facilitators.

At the end of the workshop series, each participants produced a research paper to be submitted for publication or at least have a specific research areas and guided planning that they want to contribute in.



Workshop on 21st Century Learning for Engaging Millennials Part 1 – Active Learning

UTM Centre for Engineering Education (CEE) had been invited by UTM Academic Leadership (UTMLead), Faculty of Engineering, and School of Chemical Engineering, UTM Johor Bahru to conduct workshops on 21st Century Learning for Engaging Millennials Part 1 – Active Learning to the academic staff, in January and February 2020. These workshops were conducted by Prof. Dr. Khairiyah Mohd Yusof, the Director of CEE and Dr. Syed Ahmad Helmi Syed Hassan, a Research Fellow at CEE.

The details of the workshops held are as follows:

UTM Academic Leadership (UTMLead)

Date : 14 – 15 January 2020

Participants : 45 participants

School of Chemical Engineering

Date : 17 – 18 February 2020

Participants : 30 participants

Faculty of Engineering

Date : 25 -26 February 2020

Participants : 45 participants

The 2-days workshops provide a comprehensive overview of student-centered learning. The implementation of the learning method has been known to be able to meet the needs of Outcome-based Education (OBE). As a result of this workshop, participants were exposed to the methods of implementation of student-centered learning, where the participants also underwent mini active learning training session. This disclosure will enable participants to effectively implement these methods in conducting teaching and active learning in their classroom.

UTM CEE Webinar Series (January –December) [1/2]

UTM Centre for Engineering Education (CEE) had conducted a series of webinar that was brought together with the Society for Engineering Education Malaysia (SEEM). These webinars were streamed live from CEE YouTube and CEE Facebook Page. The webinar series were held in effort to meet the Sustainable Development Goals (SDGs) in Quality Education, that is to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

The webinars that being held were:

1. [How to Integrate SDGs in Higher Education Curricula](#) by Dr. Mahyuddin Arsat
2. [How to Get Online Students Actively Engaged](#) by Dr Richard M. Felder and Dr. Rebecca Brent
3. [Implementing Change in Engineering Education: Experience of the UCL Integrated Engineering Program](#) by Professor John E. Mitchell
4. [Preparing Open Book Examination for Engineering Courses](#) by Professor Dr. Khairiyah Mohd Yusof and Ir. Dr. Siti Hawa Hamzah
5. [Terokai Matlamat Pembangunan Mampan Menuju 2030](#) by Dr. Mahyuddin Arsat, En. Mohd Munir Baharom, and En. Safwan Shaari
6. [Problem-based Learning For Developing Holistic Future- Ready Graduates](#) by Prof. Dr. Khairiyah Mohd Yusof
7. [Getting the Best of Emergency Remote Teaching](#) by Dr. Tan Joo Siang, AP. Dr. Mohd Kamaruddin, AP. Dr. Tazli Azizan, Dr. Suhairi Abd Sata
8. [Getting to the Roots: The Foundation of Problem-based Learning](#) by Dr. Ginie Servant-Miklos
9. [Engineering Education Research: Where Do We Start?](#) by Prof. Dr. Fatin Aliah Phang Abdullah
10. [Developing Problem Solving Skills Using TRIZ](#) by Dr. Zulhasni Abdul Rahim
11. [Demystifying Philosophy for Engineering Educators](#) by Prof. Dr. Johannes Strobel
12. [Engineering Ethics: Into the Future](#) by Ir. Prof. Dr. Rajkumar Durairaj, Ir. Francis Ngiam Kee Hwee, Mr Amru Daud and Ir. Dr. Zaki Yamani Zakaria
13. [Making a World of Difference: Engineers' Crucial Roles](#) by Dr. Khoo Ji Yi, Mr. Abdul Hafiz Abdullah, Dr. Muhammad Syafiq Hazwan Ruslan and Assoc. Prof. Ir. Dr. Mimi Haryani Hassim
14. [How to Help Your Stem Students Become Self-directed Learners](#) by Hoechst Celanese Professor Emeritus Richard M. Felder and Associate Professor Dr. Rebecca Brent

CEE received an overwhelming demand for conducting the webinars, that it has indirectly increased the number of subscribers at CEE YouTube channel as well as CEE Facebook fan. It is hoped that more people, especially engineering educators, can benefit and practice the knowledge shared through the webinar in improving engineering education.

More information about past and upcoming CEE webinars can be found at CEE website: <http://tree.utm.my/blog/webinar/>.

UTM CEE Webinar Series [2/2]

UTM CEE WEBINAR SERIES

HOW TO HELP STEM STUDENTS BECOME SELF-DIRECTED LEARNERS

1 DECEMBER 2020 | 9AM-11AM (MYT)

Richard M. Felder & Rebecca Brent
 Richard M. Felder: Research Professor Emeritus of Chemical Engineering, N.C. State University
 Rebecca Brent: President, Education Design, Inc., Chapel Hill, North Carolina

For more information Visit us at <https://tree.utm.my/>

UTM CEE WEBINAR SERIES

GETTING TO THE ROOTS: THE FOUNDATIONS OF PROBLEM BASED LEARNING

22 JULY 2020 | 3.00 pm

Dr. Ginie Servant-Miklos
 Associate Professor of Educational Science, University of Colorado, Boulder, CO
 PhD in Education, University of Colorado, Boulder, CO

For more information Visit us at <https://tree.utm.my/>

UTM CEE WEBINAR SERIES

GETTING THE BEST OF EMERGENCY REMOTE TEACHING

15 JULY 2020 | 3.00 pm

Dr. Tan Joo Siang, AP Dr. Mohd Kamaruddin, AP Dr. Tazli Azizan, Dr. Suhairi Abd Sata

For more information Visit us at <https://tree.utm.my/>

UTM CEE WEBINAR SERIES

HOW TO INTEGRATE SDGs IN HIGHER EDUCATION CURRICULA

10 JUNE 2020 | 4.00 pm

Dr. Mahyuddin Arsat
 PhD: Engineering Education for Sustainable Development
 Post Doc: Green 4.0 in TET Teacher Training Program

For more information Visit us at <https://tree.utm.my/>

UTM CEE WEBINAR SERIES INDUSTRIAL SEMINAR & PROFESSION

ENGINEERING ETHICS: INTO THE FUTURE

4 Nov 2020 2.00 p.m (MYT)

Dr. Zaki Yamani Zakaria
 Senior Lecturer / Fellow Centre for Engineering Education, UTM

For more information Visit us at <http://tree.utm.my/blog/webinar/>

UTM CEE WEBINAR SERIES

DEMISTIFYING PHILOSOPHY FOR ENGINEERING EDUCATORS

11 September 2020 | 10.00 am (MYT)

Prof. Dr. Johannes Strobel
 INFORMATION SCIENCE & LEARNING TECHNOLOGIES DEPT., UNIVERSITY OF WISCONSIN
 2018 STEM CHALLENGE AWARD - IEEE SOCIETY FOR TECH. IN EDUCATION (ISTE) 2018 SCIENCE EDUCATOR OF THE YEAR AWARD - ACADEMY OF SCIENCE, ST. LOUIS

For more information Visit us at <http://tree.utm.my/blog/webinar/>

UTM CEE WEBINAR SERIES

Empowering FREE @ FSSH

PROBLEM BASED LEARNING FOR DEVELOPING HOLISTIC FUTURE READY GRADUATES

9 JULY 2020 | 9.00 am

Prof. Dr. Khairiyah Mohd Yusof
 Director of Centre for Engineering Education, UTM

For more information Visit us at <https://humanities.utm.my/>

UTM CEE WEBINAR SERIES

PREPARING OPEN BOOK EXAMINATION FOR ENGINEERING COURSES

2 JULY 2020 | 10.00 am

Dr. Siti Hawa Hamzah & Prof. Dr. Khairiyah Mohd Yusof

For more information Visit us at <https://tree.utm.my/>

UTM CEE WEBINAR SERIES INDUSTRIAL SEMINAR & PROFESSION

MAKING A WORLD OF DIFFERENCE: ENGINEERS' CRUCIAL ROLES

11 November 2020 2.30 p.m (MYT)

AP Ir Dr Mimi Haryani Hassim, Dr Khoo Ji Yi, Mr Abdul Hafiz Abdullah, Dr. Muhammad Syafiq Hazwan Ruslan

For more information Visit us at <http://tree.utm.my/blog/webinar/>

UTM CEE WEBINAR SERIES

DEVELOPING PROBLEM SOLVING SKILLS USING TRIZ

17 AUGUST 2020 | 2.30 pm

Ts. Dr. Zulhasni Abdul Rahim
 Senior Lecturer of Chemical Engineering Department, Universiti Teknologi PETRONAS

For more information Visit us at <https://tree.utm.my/>

UTM CEE WEBINAR SERIES

IMPLEMENTING EDUCATION RESEARCH WHERE DO WE START?

6 AUGUST 2020 | 2.30 pm

Prof. Dr. Fatin Aliah Phang
 Chair, School of Education, Faculty of Education and Research, UTM

For more information Visit us at <https://tree.utm.my/>

UTM CEE WEBINAR SERIES

CHANGE IN ENGINEERING EDUCATION: EXPERIENCE OF THE UCL INTEGRATED ENGINEERING PROGRAMME

25 JUNE 2020 | 2.00 pm

John E. Mitchell
 Co-Director of UCL Centre for Engineering Education

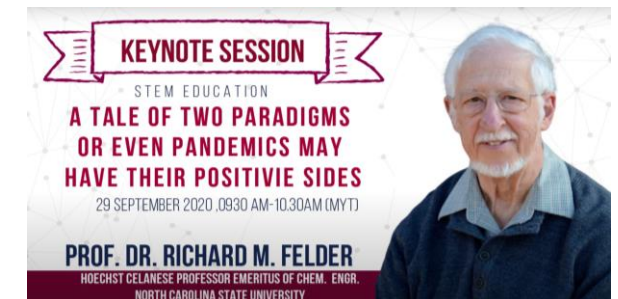
For more information Visit us at <https://tree.utm.my/>

8th Regional Conference in Engineering Education (RCEE) and Research in Higher Education (RHEd) 2020

UTM Centre for Engineering Education (CEE) had conducted the 8th Regional Conference in Engineering Education (RCEE) and Research in Higher Education (RHEd) 2020 on **29-30 September 2020**, through Whova event platform. This was the first RCEE conducted online since its inception in 2015. RCEE & RHEd 2020 is jointly organized with the Society of Engineering Education Malaysia (SEEM), which is an active organization in leading the efforts of advancing engineering education in Malaysia.

The theme for the 2020 RCEE & RHEd is: "Engineering Education Leadership in an Uncertain World" – a need for action to reform and upgrade engineering education through coordinated efforts by all major engineering players (institutions, societies, NGOs, industry and education professionals), working as a team to develop meaningful and quality education for the next generation.

There were 44 papers presented by 85 speakers altogether, including more than 20 world-renowned experts; among them are: Richard Felder, Siti Hamisah Tapsir, Roger Hadgraft, Karl Smith, Anette Kolmos, and many more.



Workshop on Outcomes-Based Education (OBE) for Indonesian Lecturers

The Universiti Teknologi Malaysia CEE team were invited to conduct a Workshop on Outcomes-Based Education (OBE) for 30 lecturers in Universitas Sebelas Maret (UNS), Indonesia. This workshop was held in conjunction with the 2nd Annual Engineering and Vocational Education Conference (AEVEC) 2020, organized by the Faculty of Teacher Training and Education, UNS. The workshop was divided into 3 sections, which were held on **Aug 19-20, September 14-15, and October 12-13, 2020.**

15 speakers and facilitators were involved in the workshop, including UTM OBE expertise, that are Prof. Dr. Shahrin Mohammad, Prof. Dr. Khairiyah Mohd Yusof, Assoc. Prof. Dr. Naziha Ahmad Azli, Prof. Dr. Fatin Aliah Phang, and Assoc. Prof. Dr. Sharifah Kamilah Syed Yusof. This workshop has successfully provided a meaningful understanding for the participants for implementation in their academic programs.



Profesor Dr Khairiyah Mohd Yusof Awarded £50,000 Grant from the Royal Academy of Engineering, UK and MoU Signing

Profesor Dr Khairiyah Mohd Yusof (CEE) has been awarded a research grant worth of **£50,000** by the Royal Academy of Engineering, UK under the **Engineering Skills where They are Most Needed** program for project titled **Raising the Quality of Education in Indonesia**.

This 2-year project has started on 1st October 2020 and will end 31 September 2022. Among the output of this project are training on Outcome-Based Education and Student-Centred Learning on 100 Indonesian lecturers, and establishment of 1 centre for engineering education in Indonesia. A contract related to this project was signed between UTM and RAE.

The first online training will take place on 8 to 11 February 2021 involving 100 Indonesian lecturers and a team of speakers and facilitators from UTM.



CEE Members Awards 2020

1. Dr. Noraini Ibrahim:
 - a. **Gold Award** in The 19th International Expo on Inventions and Innovations in conjunction with Malaysia Technology Expo 2020 for innovation titled Smart Dengue – Entomological Surveillance and Prediction Application
 - b. **Award of Merit (Special award)** in Invention and Innovation Awards 2020 at Malaysia Technology Expo 2020 for innovation titled Smart Dengue – Entomological Surveillance and Prediction (DESAP) Application
2. Dr. Nurzal Effiyana:
 - a. **Silver Award** in the International Putra InnoCreative Poster Competition for poster titled Engaging Students in Synchronous Online Class Using Real-Time Collaborative Group Discussion

