# **2014 IEEE 6th Conference on Engineering Education**

# (ICEED 2014)

### Kuala Lumpur, Malaysia 9 – 10 December 2014



IEEE Catalog Number: CFP1468H-POD **ISBN:** 

978-1-4799-4594-8



#### **2014 IEEE 6TH INTERNATIONAL CONFERENCE**

### **ON ENGINEERING EDUCATION**

#### **TABLE OF CONTENTS**

The Role of the Final Year Project and Capstone Project in Undergraduate Engineering Education in Malaysia and Japan	1
Learning Through Experience ~ Hands-on Education At a Technical College in Japan ~	7
The Role of the External Contests for Kanazawa Technical College's Engineering Education	13
Education-Job Mismatch in Engineering Sector - A Canadian Case-Study	18
The Influences of Flipped Classroom: A Meta Analysis	24
A Comparative Study of Mechanical Engineering Measurements Course Between HIT and Purdue University	29
Embedded Systems Teaching Approaches & Challenges	34
Instructional Scaffolding in Online Collaborative Learning Environment for Knowledge Construction Among Engineering Students	40
Generating Elements of Supervisory Input Support Via Exploratory Factor Analysis for Effective Supervision in Engineering Education	46
Industry-Relevant Content Embedment for the Electronics Engineering Curriculum: A Case Study.	51
Measuring Student Performance and Providing Feedback Using Competency Framework	55
An Assessment of Student Motivations to Join College of Engineering: Case Study of Prince Mohammad Bin Fahd University in Saudi Arabia	61
Libyan Higher Education System, Challenges and Achievements	67
Using Faculty Course Assessment Report for the Assessment of an Associate Degree Course in Engineering Technology Program	73
Experimenting with Gamification in the Classroom	79
User's Perception on Instructional Video Based on Needham's Five Phase Theory for Learning Advanced Differential Equations (Picard's Method)	84

The Effects of Scenario-Epistemic Game Approach on Professional Skills and Knowledge Among	
Chemical Engineering Students	90
Proposed New Strategy in CQI At Course Module Level Through Students' Feedbacks in UNITEN	95
Effective Criteria of Item Analysis Software	99
Easy Access Attendance Management System (EAMS)	105
Enriching STEM Curriculums with INTEGRATION of MIT BLOSSOMS and Higher Order Thinking Skills (HOTs)	111
UM Chemistry Module Based on Pedagogical Content Knowledge in Chemical Bonding Topic	117
Gamification: Cognitive Impact and Creating a Meaningful Experience in Learning	123
Embedded Visual Schedule Application Towards Autistic Children Development: A Preliminary	
Study	129
Physics Problem Solving Strategies and Metacognitive Skills: Force and Motion Topics	133
Development of Video Based on Cognitive Conflict Strategies in Learning Information Technology	
Application and Communication Subject	139
"Online Learning" Potential in Socratic Learning Methods to Empower Higher Level Thinking	145