

Conference Program

The 2021 International STEM Education Conference (iSTEM-Ed 2021)

November 10 - 12, 2021
Amari Pattaya, Pattaya, Thailand
www.istem-ed.com

November 10, 2021	
9:00 – 12:00	Conference Registration
13.30 - 16.30	Student Project Presentation
18.45 - 21.30	Welcome Reception (Room)

November 11, 2021				
8:00 – 10:00	Conference Registration			
Parallel papers session # 1				
Room	Zoom ID 402 936 9295	Zoom ID 724 215 9374	Zoom ID 528 021 3589	Zoom ID 570 107 1249
Time	Meeting Room I Session chair : Prof.Dr. Prayoot Akkaraekthalin (KMUTNB) (onsite)	Meeting Room II Session chair : Asst.Prof.Dr.Nipont Tangthong (RMUTT) (online)	Meeting Room III Session chair : Asst.Prof.Dr.Somchai Hiranvarodom (RMUTT) (hybrid)	Idea Room Session chair : Asst.Prof.Dr. Tuanjai Archevapanich (RMUTSB) (hybrid)
8:00 – 8:15	P01037	P00919	P00878	P00941
8:15 – 8:30	P01083	P00932	P00879	P00942
8:30 – 8:45	P01238	P01014	P00887	P01064
8:45 – 9:00	P01239	P01041	P00915	P01065 (onsite)
9:00 – 9:15	P01240	P01209	P00980 (onsite)	P01223 (onsite)
9:15 – 9:30	P01255	P01215	P01082 (onsite)	
9:30 – 10:00	Coffee/Tea Break (Grand Ballroom Foyer)			
Plenary Session				
Opening Ceremony (Zoom ID 354 263 6272)				
10:00 – 10:15	Opening Ceremony by Assoc. Prof. Dr. Athikom Roeksabutr President, Electrical Engineering Academic Association (Thailand) Assoc. Prof. Dr. Khunying Sumonta Promboon President, Chitralada Technology Institute, Thailand			
10:15 - 10:45	Keynote Lecture: "STEM Education 4.0 – Skilling for Industry 4.0" Prof. Dr. Christina Hong President, Technological and Higher Education Institute, Hong Kong			
10:45 – 11:15	Keynote Lecture: "Project-14: Towards New Normal in Education" Prof. Dr. Sukit Limpijumnong President, Institute for the Promotion of Teaching Science and Technology, Thailand			
11:15 – 11:45	Keynote Lecture: "Trends in Post-COVID STEM Education" Assoc. Prof. Dr. Khunying Sumonta Promboon President, Chitralada Technology Institute, Thailand			
11:45-12:00	Student Project Presentation Award Ceremony			
12:00 – 13:30	Lunch (Amaya Food Gallery)			
13.30-15.30	EEAAT Meeting			
Parallel papers session # 2				
Room	Zoom ID 402 936 9295	Zoom ID 724 215 9374	Zoom ID 528 021 3589	Zoom ID 570 107 1249
Time	Meeting Room I Session chair : Dr.Warinee Weerasin (RMUTP) (hybrid)	Meeting Room II Session chair : Dr. Sukkharak Saechia (ARU) (online)	Meeting Room III Session chair : Asst. Prof. Dr. Tanate Panrat (PSU) (online)	Idea Room Session chair : Dr. Pakawat. Kerpasit (RMUTP) (hybrid)
13:30 – 13:45	P01002 (onsite)	Invited paper IP01311	Invited paper IP01336	Invited paper IP00914
13:45 – 14:00	P01071	P01135	P01033	P00876
14:00 – 14:15	P01081 (onsite)	P00958	P01057	P00997
14:15 – 14:30	P01243 (onsite)	P01008	P01074	P01220

14:30 – 14:45	P01248 (onsite)	P01009	P01222	P01233 (onsite)
14:45 – 15:00	P00920 (onsite)	P01051	P01224	
15:00 – 15:30	Coffee/Tea Break (2 nd Floor Foyer)			
Parallel papers session # 3				
Room	Zoom ID 402 936 9295	Zoom ID 724 215 9374	Zoom ID 528 021 3589	Zoom ID 570 107 1249
Time	Meeting Room I Session chair : Ast.Prof.Dr.Supattana Nirukkanaporn (RSU) (onsite)	Meeting Room II Session chair : Asst.Prof.Dr.Rungaroon Porncharoen (RMUTP) (online)	Meeting Room III Session chair : Dr. Krishda Srichanpiyom (KMUTNB) (online)	Idea Room Session chair : Umpaporn Peerawanichkul (RMUTP) (online)
15:30 – 15:45	P01028	P00960	P00911	P00934
15:45 – 16:00	P01063	P01068	P00999	P01069
16:00 – 16:15	P01237	P01078	P01235	P01137
16:15 – 16:30	P01246	P01214	P01234	P01219
16:30 – 16:45	P01247	P01217	P01254	
16:45 – 17:00	P01038		P00908	
18:30 – 21:30	Farewell Dinner (Best paper awards, Introduction to iSTEM-Ed 2022) (Ballroom 1)			

November 12, 2021				
Focus Group Discussion in STEM Education				
Time	Group 1 Meeting	Group 2 Meeting	Group 3 Meeting	Group 4 Meeting
9:00 – 12:00	See information at the registration desk	See information at the registration desk	See information at the registration desk	See information at the registration desk
12.00	Conference Close			

Number	Session	Submission Number	Title	Author
1	Pedagogical Modes and Applications of STEM Education	P00941	Competencies e-portfolio construction and defense influence on STEM career choice	Maria Elena Olvera Luna and Juan Olivares Arce
2		P00942	"What is the best way to boil water?" A Home-based Activity and Collaborative Learning on Energy Efficiency	Duangkhae Srikun and Usa Jeenjenkit
3		P01064	The Feasible Study to Use The IP Camera for Doing The Online Physics Experiment	Suppakun Wattanakaroon and Parawata Thanakitvirul
4		P01065	Hybrid learning during the COVID-19 pandemic of engineering students at KMITL, Thailand	Tuanjai Archevapanich, Saran Sithiyopasakul, Paisan Sithiyopasakul, Thanavit Anuwongpinit, Tuanjai Archevapanich and Pattarachai Vichaiya
5		P01224	Building LoRaWAN IoT Kits for STEM Education in Interdisciplinary Training Programs	Hai-Phong Phan, Viet-Dung Vo, Quang-Huy Nguyen, Van-Hieu Duong and Huu-Hanh Hoang
6		P01241	Teaching basic mechanics with Lego	Tecnologico de Monterrey, Escuela de Ingeniería y Ciencias, Carr. al Lago de Guadalupe Km. 3.5, 52926 Edo. de Mex., México.
7		P00960	Encouraging Student-Centred STEM Learning in Higher Education: A theory-based project in Asia	Anders Berglund, Mats Daniels, Jake Reardon and Miriam Tardell
8		P01068	Management of Learning Activities to Promote Systemic Thinking Skills for Student Teachers Training in Technology Education	Nutchanat Chumchuen
9		P01078	Active Learning Management based on MIAP Learning Model to Enhance Electronic Technician Competence	Jakkrit Benjamaha and Pichit Uantrai
10		P01214	Management of Laboratory-Based Learning Activity on Electronic Flight Instrument System	Nipont Tangthong and Somsak Aktimagool
11		P01217	Combination of problem-based learning and case-based learning in SQL Programming for data analysis	kanoksom chutisowan , Jirawut Suwatcharakulthorn , Prekarn Trinantararat, Kongnat Ratnarangsank,Nattapong Jundang
12	Technology-Enhanced STEM Teaching and Learning	P00919	Research on Highly Efficient Deep Learning Engineering Teaching for Information Management and Information System Undergraduates	Wan Xuefen
13		P00932	MiniScript: A New Language for Computer Programming Education	Joseph Strout
14		P01014	Artificial Intelligence Practical Pedagogy For Youths in Special Economic Development Zone Mukdahan of Thailand	Supachai Prainetr and Theerapant Pipattanasuk
15		P01041	Adoption of Teaching and Learning Using E-learning in Educational Systems: A Case Study of E-learning in The LEB2 of King Mongkut's University of Technology Thonburi	Ailada Prasert, Putthamon Suwanachote and Arnon Tubtiang

16		P01209	Using Augmented Reality Technology in Learning Archeological Places	Rungaroon Porncharoen, Sunaree Ratchataruj and Songsiri Wichiranon
17		P01215	An Empirical Study of Virtual Telehealth Game	Naphatsanan Suwannawong, Prachyanun Nilsook and Panita Wannapiroon
18		P00878	The Development of Online Learning and Teaching Management in English Literature Using Google Classroom for the Undergraduate Students	Nednipa Jiemsak
19		P00879	The Efficiency of Music Learning in a Blended Learning Environment of Undergraduate Students In Phranakhon Si Ayutthaya Rajabhat University	Ruamsak Jiemsak
20		P00887	Students' Perception of Online Classes and Exams Held During COVID-19 Pandemic: The Engineering Faculty's Experience at Assumption University	Sajed Habib and Tussanai Parthornratt
21		P00915	The Development of a Self-Study System for Language Learning - Overview of the Project and Related Work -	Katsuyuki Umezawa, Makoto Nakazawa, Manabu Kobayashi, Yutaka Ishii, Michiko Nakano and Shigeichi Hirasawa
22		P01033	Development of block-based coding teaching tool with agriculture application (Smart farm)	Nathawan Khaosang, Natchanon Nirapai, Kittikan Kongmanee, Chawin Chantharasenawong and Jirasak Srirat
23		P01082	Self-training in Sports Agility Drills using Smartphone Sensors	Yaowamal Raphiphan, Sommai Punta and Suphongsa Khetkeeree
24		P00911	Design and Development of Innovation-based Learning for Advanced Digital System Course	Sethakarn Prongnuch and Suchada Sitjongsataporn Suan Sunandha Rajabhat University
25		P00999	The Problem-Based Learning by Using Computer-Aided Engineering: The Heatsink Design Competition	Chapkit Charnsamorn and Parawata Thanakitvirul Mahanakorn University of Technology
26		P01038	Digital Game-based Pedagogy: Teachers' Perspectives	Urairat Maneerattanasak
27		P01063	Learning Process during the COVID-19 Crisis, Selected Topics in Telecommunication Engineering subject, Department of Electronics and Telecommunication Engineering, RUS, Thailand	Tuanjai Archevapanich, ParkPoom Khunthawiwone, Jiran Sithiyopasakul, Thanavit Anuwongpinit, Boonchana Purahong and Paisan Sithiyopasakul
28		P01243	Instructional Package for Self-Practicing and Online Learning of Electric Motor Control Course on Covid-19 Saturation: A Case Study of Chitralada Technology Institute	Chira Sungkedkit
29		P01254	Online virtual practicum during COVID-19: the case of a student work practice program Chitralada Technology Institute	Jedsada Tangmongkhonsuk
30	Other Related Topics to STEM Education	P01037	User Experience and Usability of Conducting Examination in Google Classroom: Case Study NIDA Business School MBA Students	Thunyane Pothisarn
31		P01083	Problem Smartphone Use, Executive Function, and Academic Achievement of STEM Undergraduate Students	Graham Pluck and Helen Johnson

32		P01238	Development of a prototype of Self Balancing Robot for Education	Phadungrat Prongphimai, Udomsak Kaewmorakot, Lapus Poolperm and Sayan Chaiwas
33		P01239	Development of the quadruped robot modeling and movement simulation for Education	Udomsak Kaewmorakot and Lapus Poolperm
34		P01240	Cartesian Teaching Media Set	Sarayuth Supavasuthi, Titipat Pengsri, Udomsak Kaewmorakot and Lapus Poolperm
35		P01255	An Integrated Learning of Communication and Presentation for Industrial Work through Seminar for Special Project Preparation Using Phenomenon-Based Learning Approach	Suporn Thaenkaew, Jirasak Achariyayos, Virulh Hutavadhana and Kanokwan Ruanghiri
36		Invited paper IP00914	Through the eyes of a research team: Using theory to enhance STEM Education	Anders Berglund, Mats Daniels and Arnold Pears
37		P00876	Current Status of Engineering Education in Jordan	Wejdan Abu Elhajja, Ahed Al Wahadni, Zoubir Hamici and Mohammad Abu Afifeh
38		P00997	Application of Convex Mirrors to Study the Magnitude of the Milky Way Using STEM Education	Wiraporn Maithong, Piyapong Kunsit and Warakorn Ramung
39		P01220	Gamification Ecosystem for Research-based Learning	Siwaporn Linthaluek, Panita Wannapiroon and Prachyanun Nilsook
40		P01233	Affordable microfluidic electroanalysis for senior high school, college and university STEM education	Thana Thaweekulchai and Albert Schulte
41		P00934	Proposed Model of STEM Associated with Social Issues: Case Study on Tapioca Drip Irrigation System	Nidchabendha Chandanachulaka Roekrai and Werachet Khan-ngern
42		P01069	Determination of Critical Micelle Concentration (CMC) of Surfactants by Contact Angle Measurement Method	Charin Seesomdee, Sukkaneste Tungasmita and Panadda Dechadilok
43		P01135	A Novel Chirp Demodulation Scheme Based on SAGC for Amateur Radio Data Transmission	Sukkharak Saechia, Apiwat Magkeethum and Paramote Wardkein
44		P01137	The Development of Instructional Model for Engineering Materials Course by using Concept Mapping to Enhance Computational Skills.	Kitti Surpare and Choochat Seetao
45		P01219	Engineering Teacher Training using MIAP Based Coaching and Mentoring Techniques in Promoting Teacher Competencies	Kanyawit Klinbumrung and Kitti Seapare
46	Curriculum Studies and Development Focused STEM Education	Invited paper IP01311	UV-Visible Spectrophotometric Inquiry-Based Learning via STEM CAMP: Imitation of Syrup Drinks	Ronnakrit Chaithong, Wannapong Triampo, Pongpatai Kitrunloadjanaporn, and Darapond Triampo
47		P00908	The Development of Teaching Model using Research-Based Learning in the Illumination System Design	Wirat Aswanuwat and Krishda Srichanpiyom
48		P00958	A Study of the Micro-Teaching Practice Ability of Teacher Training in Electrical Engineering Students by Teaching and	Krishda Srichanpiyom

			Learning According to the Assessment for Learning Using Feedback Techniques	
49		P01008	Application of CDIO Initiative on High-Skill Workforce Development to Reduce Losses in Production Process	Porntip deekaew and Komkrit Chomsuwan
50		P01009	Practical Learning Model for Stimulate Innovative Idea of Technician to Reduce Loss in Manufacturing	Montree Srisangthong and Komkrit Chomsuwan
51		P01051	Digital Literacy in Austrian Lower Secondary Education - A Synthesis and Evaluation of Experiences in the First Two Years	Corinna Hörmann, Lisa Kuka and Barbara Sabitzer
52	Skills & Re-Skills Development for STEM Literacy	Invited paper IP01336	Evaluating Learner Reasoning Skills through the Active Learning Flipped STEM Classroom Design	Tanate Panrat and Hambalee Jehma
53		P00980	Applying Experiential Learning Cycle for Electrical Measurement Laboratory	Supachai Vorapojpisut
54		P01057	Fab Lab initiative in higher education: digital solutions diverted to traditional farming in Cambodia context	Chan Daraly Chin, Chanthan Hel and Rothna Pec
55		P01074	Development of Remote Laboratory for Feedback Control System Class	Piya Jitthamapirom, Pornpimon Chayratsami and Worawit Somha
56		P01222	Synthesis of Digital Medical Student Characteristics	Mathuwan Srikong, Panita Wannapiroon and Prachyanun Nilsook
57		P01223	Information Engineering Course Management in Faculty of Engineering, KMITL towards excellence	Punyaruechai Purahong, Tuanjai Archevapanich, Vasutorn Chaowalittawin, Gregory P. Millerteacher, Paisan Sithiyopasakul and Boonchana Purahong
58		P01002	The Desirable Characteristics of Vocational Internship Students Contributing to the 21st Century Skills Development in Bangkok, Thailand	Chuensumon Bunnag, Wanpen Kritongsuk and Apinya Ingard
59		P01071	STEM Communication Skills and The Rhetorical Triangle : Key-elements to Meet Business's Expectation	Orapan Bunchasansiri, Peangpen Jirachai and Krittika Tanprasert
60		P01081	A STEM CLIL Pilot Project in Ecuadorian High Schools	Helen Johnson
62		P01235	Assessment of Learning Achievement of Inquiry-based Instruction on the Topic 'Polymer' in Science for Business and Services Online Course for Vocational Certificate Students	Sapanna Nualsard
63		P01248	A Constructionism-Based Learning Framework to Promote EMT Conduit Bending Practice Skills	Chira Sungkedkit
64		P00920	Development of Outcome-based Learning and Analytical Thinking on Basic Electronics	Suchada Sitjongsataporn, Panlop Puntupreecharat, Chitpong Naphaphan, Pongsack Promwong, Vasin Boonsobhak and Krissanapong Nandhasri

65	Development Focused STEM Education	P01028	Improvement on Basic Digital System Design using Problem-based and Outcome-based Learning	Suchada Sitjongsataporn, Silpakorn Piyapanyapong, Phornphot Phophongviwat, Madard Tamsri, Yodsathorn Phumisuth and Pichet Sanitlua
66		P01234	A Development of the Learning Management Model with Imagination Beyond Reality Technique for Development to Innovation for Beginners	Siriporn lamwilai
67		P01237	Fall warning machine with image processing via the Internet of things	Chanthun Sok, Chaphawit Saechan, Chatmongkol Sittipong, Udomsak Kaewmorakot and Lapus Poolperam
68		P01246	The development of the dust particle measure kit for the surface of solar panels by displaying results via smartphone's application	Montagon Krutrarak, Werawat Suwanritdej, Ratsika Bunlue, Patinya Sakhwan, Sayan Chaiwas and Surapan Tansriwong
69		P01247	Development of Search and Inspection Set for Small Equipment and Tools in the HRS Pump Production Line: A Case Study of Lumentum International (Thailand) Co., Ltd	Mingkwan Srisomphot, Supanat Pansema, Kanokwan Ruangsiri, Patinya Sakhwan, Surapan Tansriwong , Authapong Pornjiraphun, Satitpong Satirathai and Teerapong Kunoil