The 15th National Conference on Technical Education
The 10th International Conference on Technical Education

"The New Global Megatrends and Engineering Education"

June 8-9, 2023

Faculty of Technical Education

King Mongkut's University of Technology North Bangkok (KMUTNB)

NCTechED15 & ICTechED10

June 8-9, 2023
KMUTNB Bangkok, Thailand

Organized by

Faculty of Technical Education

King Mongkut's University of Technology North Bangkok (KMUTNB), Thailand

The Association of Industrial Education (Thailand), AIET

Message from the President

Dear participants and esteemed guests,

On behalf of KMUTNB, I extend a cordial welcome to all attendees of these remarkable conferences. As we gather to commemorate our esteemed institution's 65th year anniversary, let us recognize its unwavering commitment to academic excellence, innovation, and industry collaboration over the last six decades. KMUTNB has always aimed to equip students with the essential skills and knowledge to thrive in a constantly evolving world.

The theme of the conference, "The New Global Megatrends and Engineering Education," is on the challenges we confront. These conferences give an excellent opportunity for academics, educators, and industry professionals to delve into the correlation between technical and engineering education and the labor market shifts brought on by the period of new global megatrends.

It is evident that KMUTNB is committed to providing excellent education, conducting research, and serving society. These conferences are a clear demonstration of our dedication to advancing knowledge, promoting innovation, and preparing future technologists and engineers to overcome global challenges.

I extend my sincere gratitude to all the participants, presenters, speakers, and organizers who contributed a significant effort to make NCTechED15 and ICTechED10 successful. Your dedication and commitment have greatly contributed to the success of these conferences, and will undoubtedly have a significant impact on technical and engineering education worldwide.

Best wishes for memorable and fruitful conferences.

Professor Dr.-Ing. habil. Suchart Siengchin

President of King Mongkut's University of Technology North Bangkok

Message from Dean

Dear delegates,

Greetings from the Faculty of Technical Education at King Mongkut's University of Technology North Bangkok (KMUTNB). I am pleased to welcome you to the 15th National Conference on Technical Education (NCTechED15) and the 10th International Conference on Technical Education (ICTechED10).

This year's conference theme is "The New Global Megatrends and Engineering Education." Due to climate change, globalization, and technological advancement, this is an important and timely topic. These issues affect the engineering industry; thus we must adapt our education system to meet future demands.

The conferences provide a venue for educators, researchers, and professionals from across the world to share ideas on incorporating current challenges into teaching and learning. The programs will include keynote speeches, panel discussions, and seminars on global megatrends' effects on engineering, innovative teaching techniques, technology's role in engineering education, and preparing students for future careers.

I would like to express my sincere appreciation to our Co-organizers, Sponsors, Alumni, and Friends of the Faculty of Technical Education. Your contributions have made this seminar possible, and we are grateful for your generous support. I am confident that all attendees will gain valuable knowledge from this seminar. I encourage you to make the most of this opportunity to network with professionals, explore new research, and share your perspectives and experiences.

I send my sincerest wishes for the conference to achieve great success.

Assoc. Prof. Dr. Pairote Stirayakorn
Dean, Faculty of Technical Education
King Mongkut's University of Technology North Bangkok

Message from the Conference General Chair

Dear colleagues,

As the conference General Chair, I am honored to announce that the upcoming 15th National Conference on Technical Education (NCTechED15) and 10th International Conference on Technical Education (ICTechED10) have been scheduled for June 8-9, 2023, at the Faculty of Technical Education (FTE), King Mongkut's University of Technology North Bangkok (KMUTNB) in Bangkok, Thailand.

The conferences will be hosted on a hybrid platform, which will allow for more accessibility and global reach. It is essential to address "The New Global Megatrends and Engineering Education." Due to the rapid evolution of the world, it is crucial to gain the skills necessary to effectively address emerging challenges. It is essential that engineering education aligns with the Sustainable Development Goals (SDGs) in order to build a sustainable future.

NCTechED15 and ICTechED10 continue to be excellent venues for educators, researchers, industry professionals, and students to connect, exchange ideas, and collaborate on projects to enhance engineering and technical education. These conferences emphasize innovation and practical strategies, keeping attendees abreast of industry trends. Keynote speakers, panelists, and paper presenters will come from academia, industry, and government. We also provide technical seminars to enhance teaching and engineering proficiencies.

We extend our deepest gratitude to the Committee and all those who contributed to the organization and execution of our conferences. Their dedication and hard work have enabled us to maintain a tradition of academic and engineering excellence. Our appreciation goes to all the authors who submitted papers and all the attendees. Special thanks to our Co-organizers and Sponsors for their invaluable support and look forward to continuing our successful collaboration in the future.

We look forward to seeing you in Bangkok for NCTechED15 and ICTechED10.

Suchanya P.

Asst. Prof. Dr. Suchanya Posayanant

General Chair

The 15th National Conference on Technical Education

and the 10th International Conference on Technical Education

Faculty of Technical Education

King Mongkut's University of Technology North Bangkok

Message from the President of the AIET

AIET (i.e., the Association of Industrial Education (Thailand)) has a great honor to act as a host with the Faculty of Technical Education, KMUTNB in organizing the 15th National Conference on Technical Education and the 10th International Conference on Technical Education 2023.

AIET founded in the year 1999 which consist currently of 10 Higher Education Institutions in Thailand that offer technical education and industrial education curriculum. The first meeting of the International Conference on Technical Education conducted in 2013 under the cooperation of the AIET, KMUTNB, KMITT, KMITL and RMUTT at that time.

The AIET aims to be a center for researchers, academicians, industries and others to establish and improve technical and industrial education competencies and professional standards to support for needs of future Industries, publicize research related to technical and industrial education field to national and international levels. It can be considered that the AIET is the main organization to help develop technical and vocational education, and engineering education in the country. According to the changing of globalization such as the quality of education 2030 (SDG 4), the industry innovation and infrastructure (SDG 9) and the impact of global warming and climate action (SDG 13) have caused all extremely concern in many countries including Thailand.

The 15th National Conference on Technical Education and the 10th International Conference on Technical Education will be organized under the theme of "The New Global Megatrends and Engineering Education". This is to initiate, distribute, and exchange their knowledge, research works and experiences in to realize the expediency for further improvement of the educational system that respond promptly to the changing world in the days to come.

As the president of the AIET, I fully hope that this conference will reach its objectives and I would like to express my thankfulness to all institutional members of the AIET, the organizing committee, all faculty staffs, sponsors, and keynote speakers for their strong support in organizing this conference.

Asst. Prof. Dr. Panarit Sethakul
President of the Association of Industrial Education (Thailand)
Advisor to the dean, Faculty of Technical Education,
King Mongkut's University of Technology North Bangkok

The Association of Industrial Education (Thailand)

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Conference Program

The 15th National Conference on Technical Education (NCTechED15)
The 10th International Conference on Technical Education (ICTechED10)

Conference Theme:
"The New Global Megatrends and Engineering Education"

Thursday, June 8, 2023

Hybrid Conference

Time	Details	Places:
08.00 – 09.00	Registration	ARCADIA AUDITORIUM Room (3rd floor Building 41) Faculty of Architecture and Design, KMUTNB and Online presentation live at https://www.facebook.com/ncteched/ https://www.facebook.com/icteched/
09.00 – 09.30	• NCTechED15 and ICTechED10 Opening speech by Dean of FTE KMUTNB: ***Associate Professor Dr. Pairote Stirayakorn*** • NCTechED15 and ICTechED10 Opening speech by President of AIET: ***Assistant Professor Dr. Panarit Sethakul*** • NCTechED15 and ICTechED10 Opening ceremony by President of KMUTNB : ***Professor Dr. -Ing. habil. Suchart Siengchin*** • Awards & Sponsor Recognition	
9.30 – 10.30	Special presentation on the topic: **"The Future Trend of Hybrid-Electric Aircrafts Developments in European Union"** by ***Professor Dr. Noureddine TAKORABET,*** Position: The head of Research Centre "Groupe de Recherché en Energie Electrique de Nancy (GREEN)", University of Lorraine, FRANCE	
10.30 – 10.45	Coffee Break	304 Room (Building 41) KMUTNB
10.45 – 11.45	Special presentation on the topic: **"Technical and Engineering Education for Occupational Changes in the Era of New Global Megatrends"** **1. Flying Officer Somporn Pandam,** RTAF, Deputy Secretary-General of Vocational Education Commission	ARCADIA AUDITORIUM Room (3rd floor Building 41) Faculty of Architecture and Design, KMUTNB and Online presentation live at https://www.facebook.com/ncteched/

Time	Details	Places:
	2 Associate Professor Dr. Pairote Stirayakorn, Dean, Faculty of Technical Education, KMUTNB **3. Assistant Professor Dr. Kitchar Chaithanu**, Dean, Faculty of Engineering, RMUTL **4. Dr. Panyapol Supanwong**, Managing director, SMC (Thailand) Company Limited.	https://www.facebook.com/icteched/ https://www.facebook.com/icteched/
Time	**Details**	**Places:**
11.45 – 12.00	Prize giveaway	
12.00 -13.00	Lunch	PCE room, 1 floor, (Building 41), KMUTNB
13.00-14.15	NCTechED15 Paper Presentations ICTechED10 Paper Presentations	Building 52, Faculty of Technical Education and Online Presentation by Zoom
14.15-14.30	Coffee break	
14.30–17.00	NCTechED15 Paper Presentations ICTechED10 Paper Presentations	Building 52, Faculty of Technical Education and Online Presentation by Zoom

Please note that the schedule is subject to change under certain circumstances.
*Update program on http://icteched.fte.kmutnb.ac.th and http://ncteched.fte.kmutnb.ac.th

Friday, June 9, 2023

Student Workshop (NC15, IC10) 2023 "Digital Poster and Video Presentation"

Time	Details	Places:
08.00-09.00	Registration	Online registration, 52 Building, Faculty of Technical Education/ Online presentation with Zoom Meeting
09.00-10.30	Graduate Presentations Workshop 8 sessions	52 Building, Faculty of Technical Education Online presentation with Zoom Meeting
10.30-10.45	Coffee break	52 Building, Faculty of Technical Education
10.45-12.00	Graduate Presentations Workshop 8 sessions (Continue)	52 Building, Faculty of Technical Education Online presentation with Zoom Meeting
12.00-13.00	Lunch	52 Building, Faculty of Technical Education
13.00-14.15	Graduate Presentations Workshop 8 sessions (Continue)	52 Building, Faculty of Technical Education Online presentation with Zoom Meeting
14.15-14.30	Coffee break	52 Building, Faculty of Technical Education
14.30-16.00	Graduate Presentations Workshop 8 sessions (Continue)	52 Building, Faculty of Technical Education Online presentation with Zoom Meeting

Please note that the schedule is subject to change under certain circumstances.
*Update program on http://icteched.fte.kmutnb.ac.th and
http://ncteched.fte.kmutnb.ac.th

NCTechED15 Session

1 CEE: (Civil Engineering and Education)

สาขาวิศวกรรมโยธา และการศึกษา

ผู้ดำเนินรายการ รศ.ดร.ศักดา กตเวทวารักษ์ / ดร.ปิยรัตน์ เปาเส้ง

วันที่ 8 มิถุนายน 2566 ห้อง 52-216 รูปแบบการนำเสนอ แบบออนไซต์

13.00-13.15	**CEE01**	NC058	*Rathanon Choochuy, Sakda Katawaethwarag* Study on Abrasion Resistance of Difference in Concrete Compressive Strength
13.15-13.30	**CEE02**	NC078	*Rattiya Chaiyara, Pitthaya Jamsawang* Study on Shear Strength of MICP-Treated Sand Reinforced with Vetiver Grass
13.30-13.45	**CEE03**	NC042	*Singdieo Mek-in, Sathaphon Wangchai* Study The Movement Behavior of Particle in The Ribbon Mixer Affected By the Particle Loading Arrangement, Mixing Rotational Speed, And Static Friction of The Particle with DEM Method
13.45-14.00	**CEE04**	NC068	*Kattariya Chavarit, Sakda Katawaethwarag, Chichaya Boonmee* Relationship Between Modulus of Elasticity and Compressive Strength of Concrete for Bangkok Metropolitan Region
14.00-14.15	**CEE05**	NC105	*Chokthawee Srichaipon, Thanakrit Chaingam, Wannisa Pankaew, Praphan Yawara, Somkiat Thermsuk* Study On Behavior of Alumina Powder Affecting Surface Roughness in Lapping Process for Brass Material C3604
14.30-14.45	**CEE06**	NC106	*Tanison Wongsa, Dewit Thongpanya, Nisachon Fakkai, Somkiat Thermsuk, Teerawut Sripunchata* Study on Alumina Powder Using Lapping Techniques Affecting Surface Roughness Quality for Material Aluminum 6063
14.45-15.00	**CEE07**	NC107	*Kampanart Biewchan, Kriwit Thongpanchang, Chit Mahaveera, Charnnarong Supa, Somkiat Thermsuk, Suwit Thammasang* Study On the Influences of Alumina Powder on Surface Quality by Lapping Technique for Stainless Steel Material JIS 420
15.00-15.15	**CEE08**	NC108	*Thanakit Kanyaphan, Phongsakon Musikasan, Patiphon Phueakphan, Thanapol Sombat, Somkiat Thermsuk* Study on Alumina Powder Factors Affecting Surface Roughness by Lapping Technique for Stainless Steel Material JIS 440

1 ITE: (Information Technology and Education)

สาขาเทคโนโลยีสารสนเทศและการศึกษา

ผู้ดำเนินรายการ ผศ.ดร.จิรพันธุ์ ศรีสมพันธุ์ / ดร.พุทธิดา สกุลวิริยกิจกุล

วันที่ 8 มิถุนายน 2566 ห้อง 52-216 รูปแบบการนำเสนอ แบบออนไซต์

15.15-15.30 **ITE01** NC071 *Varinthorn Huyrari*
The Comparison of The Learning Outcomes of Engineering Materials Subject of Students in College of Industrial Technology King Mongkut's University of Technology North Bangkok

15.30-15.45 **ITE02** NC082 *Kongsak Tantrawatphan*
Development of an Instructional Package for the Subject "Basic Machine Tools" Subject Code 20100-1007, Based on the Vocational Certificate Curriculum Issued in 2562 B.E. (Revised 2565 B.E.) In the Industry Category by the Office of the Vocational Educatio

15.45-16.00 **ITE03** NC019 *Rattana Suwannatip, Suthida Chaichomchuen, Anek Norasan, Komron Sirathanaku, Anong Rungsuk*
Finding Achievements in Project-Based Learning Management in Business and Entrepreneurship Courses in Business Computer students of Sri Songkhram Industrial Technology College, Nakhon Phanom University

16.00-16.15 **ITE04** NC066 *Rattana Suwannatip, Charun Sanrach, Thanyarat Nomphonkrang, Anek Norasan*
Data Mining Techniques for Forecasting Student Academic Performance Vocational certificate, Srisongkhram Industrial Technology College Nakhon Phanom University

16.15-16.30 **ITE05** NC039 *Wisitsak Boonjit, Jiraphan Srisomphan*
The Develop a Learning Management Plan with Design Thinking Process together with Online Lessons in Design and Technology Courses Junior High School to Promote the Creative Problem Solving

16.30-16.45 **ITE06** NC015 *Pongsakorn Champabhoti, Charun Sanrach*
An Efficiency Comparison of Data Classification with Data Mining Techniques in Study Plan Prediction for Upper Secondary Admission in Suranari Wittaya School

16.45-17.00 **ITE07** NC074 *Sarawut Kedtarwon, Charun Sanrach*
Comparison of Data Classification Performance to Predict the Selection of Majors to Study for A Bachelor's Degree With Data Mining Techniques

2 EEE: (Electrical Engineering and Education)

สาขาวิศวกรรมไฟฟ้าและการศึกษา

ผู้ดำเนินรายการ รศ.ดร.สมศักดิ์ อรรคทิมากูล / ผศ.ดร.นุชนาฏ ชุ่มชื่น

วันที่ 8 มิถุนายน 2566 ห้อง 52-313 รูปแบบการนำเสนอ แบบออนไซต์

13.00-13.15	**EEE01**	NC027	*Preechaya Paotachai, Mustafa Yapha Anan Awae, Duait Ngamrungroj, Preeda Chantawong*	Energy Management Air Compressor by Building Automation to Increase Cost Reduction Potential Power Consumption
13.15-13.30	**EEE02**	NC026	*Khunanon Inthanoo, Tanes Tanitteerapan*	Logic Gate Demonstration Kit Development For vocational certificate students of Phichit Technical College
13.30-13.45	**EEE03**	NC054	*Pramote Prathumpho, Tanes Tanitteerapun*	Development on Practical Teaching Set for Computer based Electrical Drawing with Shop Drawing 3D for Diploma Certificate Students
13.45-14.00	**EEE04**	NC048	*Kongkiet Hansamai, Kittiphom Fughomkred, Worrawoot Patakamin, Rergchai Srisombut*	LT. Switch Replacement Cable Set That Without Cutting the Power Distribution System
14.00-14.15	**EEE05**	NC002	*Tanapon Tomrongkunanan, Tanes Tanitteerapan*	The Study of Learning Achievement to Develop Mathematical Skills by Using The Buddy Technique Combined with Small Group Activities Through Outcomes Oriented Learning (OBEM) Submodules
14.30-14.45	**EEE06**	NC104	*Jetsada Boonsong, Narupon Rianhattakum, Siwanat Rachchompoo, Nutchanat Chumchuen*	Development of Learning Media Package of Smart Home Control System Through Internet of Things
14.45-15.00	**EEE07**	NC033	*Phakpoom Mekpho, Tanes Tanitteerapan, Tanapon Tamrongkunanan*	Peer-assisted Learning with Team-games Tournament Strategies Applied for Diploma in Electrical Circuits 1 Course Class Management
15.00-15.15	**EEE08**	NC040	*Prachaya Nooplod, Tanapon Tamrongkunanun, Tanes Tanitteerapun*	Development of a Skill Training for Wiring Light Bulb Circuits with Outcome Based Education (OBE) for Junior High School Students
15.15-15.30	**EEE09**	NC025	*Ratirat Songthong, Tanes Tanitteerapan*	STEAM Education Learning Management with Project-Based Learning Management of Lighting Circuit with Application for The Learning Area for High School Students
15.30-15.45	**EEE10**	NC038	*Wirot Yabussadee, Tanes Tanitteerapun*	Development of Instructional Package on Self-Holding Circuit in Control Motor Single Phase for Vocational Certificate Student Using Experiential Learning
15.45-16.00	**EEE11**	NC029	*Siriyakorn Kittisakulkan, Tanes Tanitteerapan*	The Developing an Experimental Set and Finding Efficiency to Control the Lighting System for Vocational Certificate Students

16.00-16.15	**EEE12**	NC034	*Kittipat Chinnaphan, Tanes Tanitteerapan* Construction and Finding Efficiency on Experimental Set of Measuring Instrument and Electric Circuit
16.15-16.30	**EEE13**	NC065	*Chatnapa Chamchangthong, Thitisak Panichakarn, Pakkawee Hayamin* Development of Analysis Efficiency and Performance Induction Motor for Fieldwork

Please note that the schedule is subject to change under certain circumstances.
*Update program on http://icteched.fte.kmutnb.ac.th and http://ncteched.fte.kmutnb.ac.th

3 ETE: (Engineering and Technical Education)

สาขาวิศวกรรมและครุศาสตร์อุตสาหกรรม

ผู้ดำเนินรายการ รศ.ดร.กิตติวุฒิ ศุทธิวิโรจน์ / ผศ.ดร.ต้องชนะ ทองทิพย์

วันที่ 8 มิถุนายน 2566 รูปแบบการนำเสนอ แบบออนไลน์

13.00-13.15	**ETE01**	NC035	*Tamnarn Taprakone, Preeda Chantawong, Kampol Pattanasombatsakul, Dusit Ngamrungroj* Direct Feed Ultra Pure Reverse Osmosis with Electro Deionization Dialysis Water Machine System for Hemodialysis
13.15-13.30	**ETE02**	NC085	*Monchai Ratchakit, Thaworn Ratrongmuang, Sombat Arsanani, Tanuphut Khehathan, Kittipat Patchamat* Building and Finding Efficiency of Heated multi-purpose Roaster
13.30-13.45	**ETE03**	NC079	*Prapun Yakhampo, Mongkol Chapa, Bunmee Junpanya, Wongsawat Champatnong, Surasak Jitprasert* Design and Development of Remote Control for use with TOYOTA Model 1NZ
13.45-14.00	**ETE04**	NC081	*Put Thamsuna, Taweesak Kodsopa, Pakin Assawaphume, Passakorn Keawsai, Somruethai Muangpuy, Yutthana Taepjan* The Truck Wheel Bearing Grease Compressor with Pneumatic System
14.00-14.15	**ETE05**	NC086	*Kitthyporn Buachan, Sahaphol Chaithawin, Pornchai Yambarn, Songsak Luejanda, Jarun Thayjun* Create And Study Aluminum Castings with Brass Moulds
14.30-14.45	**ETE06**	NC095	*Surasak Rasee, Sakhon Khaga, Susan Kidkumnun, Chadpan Chaddee, Sornpiphat Siriwat* Interlockinging Blocks From Laterite Case Study : Bannammog Nammog Subdistrict Thabo District Nongkhai Province
14.45-15.00	**ETE07**	NC087	*Naokham Sayyaseng, Panya Wangsaphan, Pornchai Yambarn, Monthian Ponsrilap, Wichian Suwannaphon* Build and Study Bee Hijack Preparation Eqequipment
15.00-15.15	**ETE08**	NC103	*Phisit Trasin, Kreiangkri Thanum, Jakkrit Pakdeeto, Pisuit Janchaichanakun* Testing Electrical Characterization of Lithium-ion Batteries
15.15-15.30	**ETE09**	NC094	*Piya Bunpala, Surachai Juntana, Yutthana Narainakamin, Sompong Papha, Pichai Sirisuwan, Klawe Thongyam* Induction Motor Simulator

15.30-15.45	**ETE10**	NC099	*Treerapat Pimsalee, Apichai Khantee, Nucharee Phumphan, Ruttanachat Dongapinun, Santi Sritrakoon* Design of Floating Solar Energy for Water Pump
15.45-16.00	**ETE11**	NC016	*Sitthisak Wangmueai, Khemnarin Khamngo, Supattra Sonthimool, Asawin Sattakom* Designing and Building of Jig and Fixture for Artillery Canon
16.00-16.15	**ETE12**	NC057	*Chumnan Suphan, Sitthidet Lanok, Prapun Yakhampo, Boonme Janpanya, Mongkol Chapa, Wongsawat Champatong, Surasak Jitprasert* The Study of Electrical Circuit Operation of Toyota 1NZ Engine with G Scan-3

Please note that the schedule is subject to change under certain circumstances.
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4 ITE: (Information Technology and Education)

สาขาเทคโนโลยีสารสนเทศและการศึกษา

ผู้ดำเนินรายการ ผศ.ดร.กฤช สินธนะกุล / ผศ.ดร.วาทินี นุ้ยเพียร

วันที่ 8 มิถุนายน 2566 รูปแบบการนำเสนอ แบบออนไลน์

13.00-13.15	**ITE08**	NC051	*Sukullaya Torngen, Rakchanok Kidkhamnuan, Kallaya Wichakot, Suthadon Sinat, Atittaya Srisongmuang, Usa Tassanaimathakul* The Development of a Website for Muangloei OTOP Shop
13.15-13.30	**ITE09**	NC052	*Sukullaya Torngen, Rakchanok Kidkhamnuan, Kritsana Soasai, Jaruwan Promsiri, Thanyarat Thantee, Panlit Bauchoo* A Development Of Web Application In 360-Degree Virtual Reality To Promote Cultural Tourism In Chiang Khan District Loei Province
13.30-13.45	**ITE10**	NC083	*Kacha Kosila, Manote Keaowka, Warut Wannakasemsuk, Chadatan Sawareepon, Wongnirun Channgam* Development of Information Management System on Web Applications for Nongwa Wittayasan School
13.45-14.00	**ITE11**	NC102	*Yupaporn Jantasiri, Piyawan Bullung, Supaporn Srisura, Janisata Panipad, Parinya Saenyothaka* Web Application Development of Kuanwan Health Promotion Hospital Nongkhai Province
14.00-14.15	**ITE12**	NC021	*Kanokthip Chinkham, Pavida Kitipanya* Web Application Development, Booking System for Visiting Sala Kaew Ku Nong Khai Province
14.30-14.45	**ITE13**	NC030	*Suthisa Pradit, Phithunipha Kulrat, Orapan Imumporn, Duangnapa Pidtathanang, Kansarin Khaminkhiew, Ratrawee Chaipatseree, Ariya Uyapitang* Creating A Web Application for Notification System for Repairingmobile Phone Equipment at JJ Phone Shop

14.45-15.00	**ITE14**	NC073	*Purinut Sopakham, Suthisa Pradit, Siriluck Srikhampa, Siwaphorn Mungkunkamchao, Kansarin Khaminkhiew, Duangnapa Pidtathanan* Development of Personnel Database System for Protected Area Regional Office 10 (Udonthani)
15.00-15.15	**ITE15**	NC076	*Thidatip Seanbunsiri, Puttida Sakulviriyakitkul* A Study of Teaching Results by Using Boardgames in Conjunction with Gamification Learning Environment to Enhance Problem Solving Thinking in Computing Science for Late Elementary School
15.15-15.30	**ITE16**	NC031	*Chongrak Saichit, Jutaporn Chardnarumarn, Kriangkrai Jariyapanya* Finding the Quality of CAI Learning Materials with Constructivist Concepts. on The Development of Communication Technology for Matthayom 2 Students
15.30-15.45	**ITE17**	NC043	*Nuttareyaporn Pumsawang, Jutaporn Chardnaruman* Develop Planning Skills Using Computer Instruction on Basic Application Development for Students in Grade 9 Student
15.45-16.00	**ITE18**	NC045	*Pawit Ninpong, Benyapa Klinkam, Kriangkrai Jariyapanya* The Development of Board Game Associated with Augmented Reality Technology for Matthayom 1 Students
16.00-16.15	**ITE19**	NC046	*Ratthanawaree Chonojuti, Juthaporn Chardnaruman, Kriangkrai Jariyapanya* Gamification Learning Achievement Computational Science Course on Problem Solving with Flowcharts for Prathomsuksa 4 Students

Please note that the schedule is subject to change under certain circumstances.
*Update program on http://icteched.fte.kmutnb.ac.th and http://nctеched.fte.kmutnb.ac.th

5 ITE: (Information Technology and Education)

สาขาเทคโนโลยีสารสนเทศและการศึกษา

ผู้ดำเนินรายการ ผศ.ดร.ดวงกมล โพธิ์นาค / รศ.ดร.พินันทา ฉัตรวัฒนา

วันที่ 8 มิถุนายน 2566 รูปแบบการนำเสนอ แบบออนไลน์

13.00-13.15	**ITE20**	NC061	*Rubkhwan Piyawat, Piyatida Mayaset, Kriangkrai Jariyapanya*

The Development of an Adaptive Learning Game Using the Wordwall Platform to Promote Technological Learning of English Words for Students in Grade 2

13.15-13.30	**ITE21**	NC077	*Nattakarn Somsriworakun, Thiyada Srisa-ard, Kriengkrai Jiyapanya*

The Develop an Interactive Sign Flipping Game On Computer Equipment for Students in Grade 1

13.30-13.45	**ITE22**	NC049	*Katika Sonak, Charinee Phothong, Juthaporn Chartnarueman*

Design of Computer-Aided Instruction on Introductory Writing in Python For Students in Grade 2

13.45-14.00	**ITE23**	NC069	*Phanuphan Duangkhayai, Wachirawit Jeemdee, Juthaporn Chartnarueman*

Developing Distancing with Roblox Game Technology About the Covid-19 virus, grade 3

14.00-14.15	**ITE24**	NC062	*Sukhita Kitaudomwat, Nursofia Peng, Pramote Tongchin*

Development of Computer-Assisted Instruction Emphasis Is Placed on Game-Based Learning Activities with Application Nearpod on The Change of Technology for Students in Grade 1

14.30-14.45	**ITE25**	NC080	*Jirawut Chankate, Jutaporn Chardnarumarn, Pramote Tongchin*

Online Computer Assisted Instruction on Use of Basic Scratch Programs for Grade 4 Students

14.45-15.00	**ITE26**	NC037	*Thanyalak Klamthong, Pramote Tongchin*

The Development of Analytical Thinking Skills through 5E Inquiry-Based Learning Activities Combined with the Use of Quizizz teaching media on Threats from Information Technology of Matthayomsuksa 1 Students

15.00-15.15	**ITE27**	NC067	*Metad Aiamkajorn, Kanapit Puchsayavat, Sittichok lamangthong, Pramote Tongchin*

The Game-Based Learning Approach is Used to Enhance Learning of Basic English With The Ztype Game in Secondary 3

15.15-15.30	**ITE28**	NC063	*Pemika Ainbumroong, Urassaya Permsin, Jirawat Kaewgosol*

The Development of Online Games to Promote Learning on the use of the Internet Computational Science Course for Students in Grade 4

15.30-15.45	**ITE29**	NC064	*Benjamaporn Ruangaram, Chonnarin Pannak, Jirawat Kaewgosol*

Development of Didactic Games Using The Gamilab Platform Course on Design and Technology on Changes in Technology Secondary 1

15.45-16.00	**ITE30**	NC089	*Surapong Chaijan, Suksan Suttisan, Apiwat Hongthong, Sattaya Khampangsririchai, Chonticha Ckidchai, Haranthana Uyaphitang*

Student Information Program for The Child Development Center of Kuan Wan Subdistrict Municipality

16.00-16.15	**ITE31**	NC088	*Jirapot Prapin, Rungruang Penkulkit, Kamol Masuk, Angkana Audthaphon, Phakin Rianthong, Pongwiwat Hongtong*

Obstructed Parking Notifier Devices via LINE Application for the Vehicles of Disabled Person

Please note that the schedule is subject to change under certain circumstances.
*Update program on http://icteched.fte.kmutnb.ac.th and http://ncteched.fte.kmutnb.ac.th

6 VTE:(Vocational and Technical Education)

สาขาอาชีวะและเทคนิคศึกษา

ผู้ดำเนินรายการ ดร.อโนมา ศิริพานิช / ผศ.ดร.สยาม แกมขุนทด

วันที่ 8 มิถุนายน 2566 รูปแบบการนำเสนอ แบบออนไลน์

13.00-13.15	**VTE01**	NC044	*Prarichat Ngimsanthire, Phonsak Lerthiranphanya*

Condition of Problems and Solutions for Teaching and Learning Management of Vocational Education Institutions with Industrial Subject

13.15-13.30	**VTE02**	NC056	*Phatcharee Gatenil*

Study on Occupation of Graduates in Instrumentation System Engineering Course of the Faculty of Engineering, King Mongkut's University of Technology North Bangkok

13.30-13.45	**VTE03**	NC098	*Supa Nasaeng, Chutipat Chawanchai, Prapharporn Channgam, Benchamas Meetong, Pornchita Prachanan, Pimchanok Raksadech*

A Study of Desirable Qualifications of Accountants in The Digital Age of Food and Beverage Production Industry in Udon Thani Province

13.45-14.00	**VTE04**	NC092	*Nongyao Prasanthong, Chular Dokkham, Thanapakron Huttasill. Porntip Akarach, Suree Ournpokrang, Kanyakorn Phompim*

Factors Affecting the Determination of Accounting Services of Accounting Firms in Buengkan Province

14.00-14.15	**VTE05**	NC091	*Chular Dokkham, Nongyao Prasanthong, Kanyakorn Phompim, Thanapakron Huttasill, Porntip Akarach*

Factors Affecting Vat Filing of Juristic Person Entrepreneurs Registered as a Juristic Person with The Department of Business Development, Bueng Kan Province for The Year 2022

14.30-14.45	**VTE06**	NC101	*Jittaset Lertsathian, Wattanawan Pimsri, Ekawit Pimpajchim, Waraporn Thongphue, Amnat Thongsan, Supannika Kasinsu*
	Choosing A Competitive Logistics Strategy in The Road Transport Business A Case Study of A Transport Company In Udon Thani		
14.45-15.00	**VTE07**	NC097	*Thassanee Thanaanantrakul, Komthong Chaiyasit, Daungpron Saka, Santipong Pankhoksung, Krittika Sonha*
	Knowledge And Understanding of Corporate Income Tax Payment of Industrial Businesses in Udon Thani Province		
15.00-15.15	**VTE08**	NC047	*Tharawarin Thuakprasert, Thatsanee Leebrng, Wichada Promboonsri, Warunya Sooksumran*
	A Study of the Relationship between Modern Accounting Profession Ethics and Performance Success of Cooperative Auditors in the Upper Northeastern Region; Case Study: The Cooperative Auditing Office in Nongkhai, Udonthani and Buengkan		

Please note that the schedule is subject to change under certain circumstances.

*Update program on http://icteched.fte.kmutnb.ac.th and http://ncteched.fte.kmutnb.ac.th

7 VTE:(Vocational and Technical Education)

สาขาอาชีวะและเทคนิคศึกษา

ผู้ดำเนินรายการ รศ.ดร.ชัยวิชิต เชียรชนะ / ดร.สามารถ สว่างแจ้ง

วันที่ 8 มิถุนายน 2566 รูปแบบการนำเสนอ แบบออนไลน์

13.00-13.15	**VTE09**	NC012	*Panadda Khayandee, Pornchanok Faengkratoke*
	Efficiency Improvement of Logistics Management of Thana Logistics Co., Ltd. In the Northeastern Region, Case Study: Ubon Ratchathani Branch, Nong Khai Branch, Chong Mek Branch and Mukdahan Branch		
13.15-13.30	**VTE10**	NC014	*Wanthakan ThanaKhun, Wilawan Yotkaew, Anusara Sangkompan*
	Relationship between Professional Accounting Skills in the Digital Age and Work Efficiency of Local Administrative Organization Accountants in Muang Nong Khai District, Nong Khai		
13.30-13.45	**VTE11**	NC090	*Paetay Peantong, Nirinda Dongsaensuk, Montree Sutthimethakul, Jirarat Boonmee, Sutthanuch Pimsen, Arisara Jansuk*
	The Impact of a Digital Accounting System on Accountants In Udon Thani Business Organizations		
13.45-14.00	**VTE12**	NC008	*Komchan Punchaiyapum, Chalida Banpanit*
	The Study of Skills of the Accounting Profession on Accounting office in Muang District Udon Thani Province		
14.00-14.15	**VTE13**	NC032	*Pantip Sawasdee, Pagamart Paramee, Rattana Rachnoi, Paphapat Saengkaew, Nirinda Dongsansuk*
	Factors Pertaining to Debt Default of Kawasaki Motorcycle Hire-Purchase Debtors Leng Motor Nong Khai Limited Partnership		
14.30-14.45	**VTE14**	NC011	*Jinwara Kumpinun, Suttida Srisoi, Aranya Butwet, Tharawarin Thuakprasert*
	Opinions of Enterprises Towards the Skills of Vocational Training Studying in Bachelor Degree of Technology in Accounting Program (Continuing), Nong Khai Vocational College		
14.45-15.00	**VTE15**	NC041	*Seng Xayavong*
	The Construction and Compare the Achievement Validation of Training Package on the Topic of Photovoltaic Stand-alone System		
15.00-15.15	**VTE16**	NC096	*Rattanaporn Triphop, Prapharporn Channgam, Saichon Chomphu*
	Household Account Model of Retail and Wholesale Business In Muang District, Loei Province		
15.15-15.30	**VTE17**	NC005	*Varunee Phuchomsri, Siriyakron Auntaew*
	Study on Characteristics of Desirable Characteristics of Accountants in Muang District, Nongbualamphu Province		

Please note that the schedule is subject to change under certain circumstances.

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ICTechED10 **Session**

8 Session A Chairman : Prof. Dr. Prachyanun Nilsook
Co-Chairman : Assoc. Prof. Dr. Panita Wannapiroon
June 8, 2023 Room 52-311A

13.00-13.15 **A01** *Weerayute Sudsomboon*
Investigating the Factor Analysis of Community Enterprise Innovation Management in Nakhon Si Thammarat Province

13.15-13.30 **A02** *Worratorn Thongroong and Suchanya Posayanant*
Career Advancement Factors on Architects and Engineers in Construction Companies

13.30-13.45 **A03** *Bhorntiwa Buadaeng and Suchanya Posayanant*
Mitigation of Construction Management Problems Causing Delays in Power Plant Construction Project

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Student Workshop (NC15, IC10) 2023

“Digital Poster and Video Presentation”

June 9, 2023

กลุ่มที่ 1 เครื่องกล – การผลิต – โยธา	ห้อง A
B1001	ออกแบบและสร้างเครื่องตัดลำมันสำปะหลัง
09.31-09.45 น.	*กิตติกร สุริยะวงศ์, นครินทร์ แป้นหมื่นไวย์*
B1004	การออกแบบและสร้างรถยนต์ไฟฟ้า
09.46-10.00 น.	*มงคล พรมกลาง, ณัฐพงษ์ น้อยโสภา, อลงกรณ์ เทศธิรักษ์*
B1005	หุ่นยนต์ฉีดพ่นยาฆ่าเชื้อโควิด-19
10.01-10.15 น.	*ณัฐวุฒิ โคตะมี, อายุทธการณ์ สำราญ*
B1008	แม่แรงไฟฟ้าสื่อสารควบคุมด้วยรีโมทคอนโทรล
10.16-10.30 น.	*วีระชาติ อินมะโรง, มาร์วิน อันทอน บรินสา*
B1009	ชุดฝึกระบบไฟฟ้าและอิเล็กทรอนิกส์ควบคุมรถยนต์ไฟฟ้า
10.31-10.45 น.	*สหรัฐ บุตรพันธุ์, สิทธิชัย ควงสีหา, วัชรพล แสงจันทร์คุ้ม*
B1010	เครื่องทดสอบหัวฉีดเครื่องยนต์ดีเซลแบบคอมมอนเรล
10.46-11.00 น.	*กิตติศักดิ์ พระสุราช, ธิษณ์ภวัต พรธรรมจินต์*
B1011	ชุดสาธิตระบบส่งกำลังรถยนต์ไฟฟ้า
11.01-11.15 น.	*ธนากร วงค์ทองคำ, ปณวัฒน์ กันหาชิน, เตชินท์ ชูตรี*
B2001	ออกแบบและสร้างข้อต่อไม้ไผ่ด้วยอลูมิเนียม
11.16-11.30 น.	*พิสิฐ พรมภักดิ์, พรชัย แย้มบาน, จรัญ ทวยจันทร, มณเฑียร พลศรีลาภ, วิเชียร สุวรรณพล*
B2002	การออกแบบและสร้างเครื่องปั่นเมล็ดข้าวโพด
11.31-11.45 น.	*จาฤก กันเอี้ยง, พิสุทธิ์วัชร์ สนั่นไหว, ปริญญา ปัญญาศรี*
B2003	การออกแบบและสร้างเครื่องอัดเม็ดอาหารสัตว์
11.46-12.00 น.	*ณัฐนันท์ พรมศรีจันทร์, วารินทร์ วรินทรา, สุริยัน นันตะรีสี*
E1001	บล็อกซีเมนต์เพสต์ผสมกระดาษ
13.00-13.15 น.	*คุณากร ปานเสน, แทนไท โภคาพานิชย์*

กลุ่มที่ 1 เครื่องกล – การผลิต – โยธา	ห้อง A
E1002	บล็อกพลาสติกผสมมวลรวมละเอียด
13.16-13.30 น.	*อดิศร วงค์จันทร์, นครนพ โยธาทร*
E1003	บล็อกซีเมนต์มอร์ต้าร์ผสมกระดาษ
13.31-13.45 น.	*วริศา ชมภูจันทร์, ธนสินธุ์ ถิ่นไกล*
E1004	การศึกษาสมบัติการทนไฟ บล็อกซีเมนต์เพสต์และซีเมนต์มอร์ต้าร์ผสมกระดาษรีไซเคิล
13.46-14.00 น.	*เสาวลักษณ์ ต้นคำ, ณัฐวุฒิ พรหมกุล*
E1005	การศึกษาสมบัติการทนไฟบล็อกพลาสติกผสมมวลรวมละเอียดและบล็อกซีเมนต์มอร์ต้าร์ผสมเศษพลาสติก
14.01-14.15 น.	*สาลินี เพชรสำ, จีรวัฒน์ มูลประเสริฐ*
E1007	ซีเมนต์นอนซริ้งเกร้าท์ผสมซีเมนต์มอร์ต้า
14.16-14.30 น.	*ภานุวัฒน์ มูลชาภิรมย์*

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*Update program on http://icteched.fte.kmutnb.ac.th and http://ncteched.fte.kmutnb.ac.th

กลุ่มที่ 2 ไฟฟ้า	ห้อง B
A1001	อุปกรณ์ส่งสินค้าแบบอัตโนมัติ
09.31-09.45 น.	*นายธฤต ปริวัตร, นายภาคิน โคตรฉรงค์*
A1002	เครื่องปอกสายไฟฟ้าอัตโนมัติ
09.46-10.00 น.	*นายพงศ์วิวัฒน์ โยคิ*
A1003	ระบบปรับอากาศพลังงานแสงอาทิตย์แบบเคลื่อนที่
10.01-10.15 น.	*น.ส.สายชล บุญรัตน, มงคล แถวน้ำปราด*
A1004	เครื่องนับจำนวนคนแบบแสดงอุณหภูมิร่างกาย
10.16-10.30 น.	*จีรภา ลายคำ, รุจโรจน์ ลาญวนวงศ์*
A1005	อุปกรณ์แจ้งเตือนน้ำมันในเจนเนอร์เรตอร์ผ่านสมาร์ทโฟน
10.31-10.45 น.	*สุพรรณี จาวชัยภูมิ, สภา นาสถิตย์*
A1006	ถังขยะเปิด-ปิดอัตโนมัติด้วยอัลตราโซนิค
10.46-11.00 น.	*นายณัฐวัฒน์ ทองวิเศษ, นายคุณานนท์ วงศ์ศิริยานนท์*

กลุ่มที่ 2 ไฟฟ้า	ห้อง B
A1001	อุปกรณ์ส่งสินค้าแบบอัตโนมัติ
09.31-09.45 น.	*นายธฤต ปริวัตร, นายภาคิน โคตรณรงค์*
A1002	เครื่องปอกสายไฟฟ้าอัตโนมัติ
09.46-10.00 น.	*นายพงศ์วิวัฒน์ โยคิ*
A1003	ระบบปรับอากาศพลังงานแสงอาทิตย์แบบเคลื่อนที่
10.01-10.15 น.	*น.ส.สายชล บุญรัตน, มงคล แถวน้ำปราค*
A1004	เครื่องนับจำนวนคนแบบแสดงอุณหภูมิร่างกาย
10.16-10.30 น.	*จีรภา ลายคำ, รุจโรจน์ ลาญวนวงศ์*
A1005	อุปกรณ์แจ้งเตือนน้ำมันในเจนเนอร์เรตอร์ผ่านสมาร์ทโฟน
10.31-10.45 น.	*สุพรรณี จาวชัยภูมิ, สภา นาสถิตย์*
A1006	ถังขยะเปิด-ปิดอัตโนมัติด้วยอัลตราโซนิค
10.46-11.00 น.	*นายณัฐวัฒน์ ทองวิเศษ, นายคุณานนท์ วงศ์ศิริยานนท์*
A1007	ชุดจำลองเครื่องตรวจน้ำรั่ว
11.01-11.15 น.	*ธีระเดช อ่อนธรรม, ธิดารัตน์ วงศ์สาวัต*
A1008	เครื่องตรวจไฟรั่ว
11.16-11.30 น.	*เจนจิรา สุขทองสา, ศักดา เวียงอินทร์, พิษณุ จำปาขาว*
A1009	เสาหลักนำทางแจ้งเตือนอุบัติเหตุ
11.31-11.45 น.	*ภาสกร บุญสมัคร, เจษฎา สารีมาตย์, คงนคร คนสันต์*
A1010	การสร้างเครื่องไล่นกอัจฉริยะ
11.46-12.00 น.	*บดินทร์ มิ่งชัย, วุฒิชัย นามวิเศษ, สุดารัตน์ บุญกว้าง*
A1011	อุปกรณ์ตรวจจับฟิวส์แรงดันต่ำผ่านแอพพลิเคชั่นไลน์
13.01-13.15 น.	*เจริญ ศรีจันทร์, นายวชิระ กลางหล้า, นายอรรถพงศ์ อ่อนธรรม*
A1014	ชุดจำลองเครื่องกำเนิดไฟฟ้าแบบปั่นด้วยมือ
13.16-13.30 น.	*จตุรงค์ พันธุ์สิน, ทักษิณ โสบุญมา, เอกสิทธิ์ สีหะนาม*
A1015	ชุดหาประสิทธิภาพหลอดไฟ LED
13.31-13.45 น.	*อนุรักษ์ บุราณสาร, นันทวัฒน์ วรรณชัย*
A1016	เครื่องตอกแท่งกราวด์

กลุ่มที่ 2 ไฟฟ้า	ห้อง B
13.46-14.00 น.	*คุณากร มงคลวัตร, วชิราภรณ์ อบมา, อนุวัฒน์ กระจ่างแจ่ม*
A1018	ชุดสาธิตการผลิตไฟฟ้าจากโซล่าเซลล์แสงอาทิตย์ระบบออนกริด
14.01-14.15 น.	*รุ้งนภา น้อมวารี, จิรเมธ อัมฤตานนท์, วรภัทร สร้อยสวัสดิ์*

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กลุ่มที่ 3 อิเล็กทรอนิกส์ – คอมพิวเตอร์ธุรกิจ – เทคโนโลยีสารสนเทศ	ห้อง C
A2001	อุปกรณ์แจ้งเตือนการจอดรถกีดขวางรถผู้พิการผ่านแอพพลิเคชั่นไลน์
09.31-09.45 น.	*ทีฆยุ ศรีอักษร, สันติภาพ สร้างช้าง*
A2002	ระบบข้อความตอบกลับแบบดีย์เวิร์คเพจประชาสัมพันธ์วิทยาลัยเทคนิคหนองคาย : กรณีศึกษาการรับสมัครนักศึกษา ปีการศึกษา 2566
09.46-10.00 น.	*ภูริทัตต์ คำภูมี, ยุทธนา พิลาดิษฐ์*
D1001	การพัฒนาเว็บแอปพลิเคชันระบบการจองห้องพักรีสอร์ทจันทร์ผาโฮมสเตย์
10.01-10.15 น.	*วิชชุดา จันทะราช, ทิพวรรณ สิงหา*
D1002	การพัฒนาเว็บแอปพลิเคชันร้านกาแฟเมืองหมี
10.16-10.30 น.	*อภิวัฒน์ รุ่งสุวรรณ, พาขวัญ สระแก้ว*
D1003	การพัฒนาเว็บแอปพลิเคชันร้านอาหารนัดพบริมโขงหนองคาย
10.31-10.45 น.	*วิภาดา นวนทั่ว, ศาตพร หอมสมบัติ*
D1004	การพัฒนาเว็บแอปพลิเคชันระบบจองคิวพิพิธภัณฑ์สัตว์น้ำจังหวัดหนองคาย มหาวิทยาลัยขอนแก่น
10.46-11.00 น.	*สุวพิชชา สาคมุณี, ศิริรัตน์ สิงห์นาค*
D1005	การพัฒนาเว็บแอปพลิเคชันการจองห้องพัก JJ Green Riverkwai Hotel.
11.01-11.15 น.	*ศิริรัตน์ อังคุนันท์, สุมนทรา โสภาเวทย์*
D1006	การพัฒนาเว็บแอปพลิเคชันภาพถ่ายดิจิทัลการท่องเที่ยว จังหวัดหนองคาย
11.16-11.30 น.	*ชานน บุตรดี, ณัฐคนัย โคตะนนท์*
D1007	การพัฒนาเว็บแอปพลิเคชันโรงงานน้ำดื่มชื่นจิต จังหวัดหนองคาย
11.31-11.45 น.	*โรจนา พูลสวัสดิ์, ภัคพงษ์ โกศิลา*
D1008	ระบบเบิกจ่ายวัสดุ สำนักงานสรรพสามิตพื้นที่อุดรธานี

กลุ่มที่ 3 อิเล็กทรอนิกส์ – คอมพิวเตอร์ธุรกิจ – เทคโนโลยีสารสนเทศ	ห้อง C
11.46-12.00 น.	*สมเดช นวลศิริ, เพลินพิศ ศรีบาง, กฤติพิชญ์ จรูญนิรมิตวาณิช*
D1009	การสร้างเว็บไซต์ หจก.ณัฐมอเตอร์เซลล์ สาขาสามแยกอาชีวะอุดรธานี
13.01-13.15 น.	*เอมอร แก้วสุวรรณ, ไกรสร ทะวงษ์*
D1010	การสร้างโมบายแอพพลิเคชันระบบการจัดสต๊อกสินค้าคงคลัง บริษัท โทรคมนาคมแห่งชาติ จำกัด (มหาชน) ส่วนบริการลูกค้า จังหวัดอุดรธานี
13.16-13.30 น.	*อดิเทพ เลื่อนสูงเนิน, ฌามีณญ์ ชุมแสง, ศุภเศรษฐ์ คำจันทร์*
D1011	การสร้างเว็บไซต์ CNM THE B SHOP
13.31-13.45 น.	*โชติกา ใจมา, เวรุกา โพธิ์เคช, หนึ่งฤทัย แสงเดือน*
D1012	ออกแบบการตลาดออนไลน์ให้กับธุรกิจจำหน่ายและบริการรถจักรยานยนต์ของบริษัท สยามยนต์ โมเดิร์นไบค์ จำกัด
13.46-14.00 น.	*ธัญญาภรณ์ อุบลบาน, อรพิน อินทรักษา*
D2002	ระบบเช็คชื่อนักเรียนนักศึกษา สาขาเทคโนโลยีสารสนเทศ
14.01-14.15 น.	*นพคล ธรรมวงษา, เกรียงไกร กงภูเวส*
D2003	โครงการผลิตสื่อและจัดกิจกรรม รณรงค์เผยแพร่ความรู้การเลือกตั้ง ส.ส.
14.16-14.30 น.	*สิริภัทร โลหะบาล*
D2004	เว็บไซต์ บริษัท สกุลกิม กำจัด
14.31-14.45 น.	*ฉปภัช สุทนต์*
D2005	เครื่องวัดอุณหภูมิไร้การสัมผัส
14.46-15.00 น.	*เตชินท์ พรสมานศิริสกุล, ชัยธวัช หาบุญมี*
D2006	อุปกรณ์นับคนเข้า - ออก ห้องสมุด วิทยาลัยเทคนิคกาญจนาภิเษกอุดรธานี
15.01-15.15 น.	*ศศิธร นาชัยเวียง, สุธารัตน์ โสทัพ*

Please note that the schedule is subject to change under certain circumstances.
*Update program on http://icteched.fte.kmutnb.ac.th and http://ncteched.fte.kmutnb.ac.th

กลุ่มที่ 4 บัญชี	ห้อง D
C1019	การศึกษาเกี่ยวกับการวางระบบบัญชีกับการจัดทำบัญชีของผู้ประกอบการพาณิชย์ในจังหวัดหนองบัวลำภู
09.31-09.45 น.	*สิริญาณี ปักกัดตัง, ปิยฉัตร ทองขำ*
C1020	การศึกษาความต้องการพัฒนาความรู้ทางวิชาชีพผู้ประกอบการวิชาชีพการบัญชีในจังหวัดเลย
09.46-10.00 น.	*นฤมล สายจำปา, พรประชา ลุนราช, บุสสดี พรหมศรีจันทร์*
C1021	ศึกษาต้นทุนการผลิตและผลตอบแทนของของสินค้า OTOP มะพร้าวแก้ว อำเภอเชียงคาน จังหวัดเลย
10.01-10.15 น.	*ศศิประภา แก้วจำปา, อภิญญา ราคาแพง, พิมพกานต์ วงษ์ป้อง*
C1022	การศึกษาคุณสมบัติของนักบัญชีที่พึงประสงค์ของสำนักงานบัญชีในเขตอำเภอเมือง จังหวัดเลย
10.16-10.30 น.	*สาวิตรี ภายี, สุภาวดี หัสดา, อริสรา บาบุญ*
C1023	ปัจจัยที่ส่งผลต่อการปฏิบัติงานของพนักงานบัญชีในสถานการณ์ Covid-19 ของธุรกิจอุตสาหกรรมกลุ่มจังหวัดภาคตะวันออกเฉียงเหนือตอนบน 1
10.31-10.45 น.	*อรรถพล การิสุข, ทิพวรรณ วิจิตรพล*
C1025	ปัจจัยที่มีผลต่อการตัดสินใจเลือกใช้บริการสำนักงานอาร์ทีการบัญชี อำเภอเมือง จังหวัดอุดรธานี
10.46-11.00 น.	*จินตนา มาพลัน, ระเบียบ ทุนรวม, สุดารัตน์ มะลิงาม*
C1026	ปัจจัยที่มีผลต่อการจัดทำบัญชีครัวเรือนในสถานการณ์โควิด–19 : กรณีศึกษา บ้านหนองเจริญ ตำบลขอนยูง อำเภอกุดจับ จังหวัดอุดรธานี
11.01-11.15 น.	*วิไลพร เนตนี, ชรินรัตน์ จำปาเทศ*
C1029	ปัจจัยที่ส่งผลต่อการกำหนดค่าบริการทำบัญชีของสำนักงานบัญชีในจังหวัดบึงกาฬ
11.16-11.30 น.	*อรัชพร สมดีดี, ขวัญข้าว เจริญดี*
C1030	ประสิทธิภาพของนักบัญชีขุดดิจิทัลของสถานประกอบการในเขตพื้นที่จังหวัดหนองคาย อุดรธานี หนองบัวลำภู เลย และบึงกาฬ
11.31-11.45 น.	*ปัทมาวรรณ หนูกลาง, ปรียานุช สุดตะนนท์, เกษร ลีมืด*
C2001	การศึกษาพฤติกรรมของลูกค้าในการเลือกใช้บริการสั่งอาหารแบบเดลิเวอรี่ผ่านแอพพลิเคชัน foodpanda ของลูกค้าในเขตเทศบาลเมืองหนองคาย
11.46-12.00 น.	*ก้านหยก วุฒิโกวิทย์*
C2002	การศึกษาพฤติกรรมทางการตลาดที่มีผลต่อการตัดสินใจซื้อสินค้าจากร้าน 7-ELEVEN ของผู้บริโภคในเขตเทศบาลเมืองหนองคาย
13.01-13.15 น.	*เกษรินทร์ ตุระวิภาค*

กลุ่มที่ 4 บัญชี	ห้อง D
C2003	การศึกษาความพึงพอใจต่อการสั่งซื้ออาหารแบบเดลิเวอรี่ผ่านแอพพลิเคชัน foodpanda ของลูกค้าในเทศบาลเมืองหนองคาย
13.16-13.30 น.	*ชัยชนะ เบ้าสิงห์สวย*
C2004	การศึกษาปัจจัยที่มีผลต่อการใช้บริการผ่านแอพพลิเคชัน foodpanda ของลูกค้าในเทศบาลหนองคาย
13.31-13.45 น.	*นาคอน เพลียขุนทด*
C2005	การศึกษาพฤติกรรมผู้บริโภคในการตัดสินใจซื้อสินค้าร้าน The Pizza Company สาขาถนนประจักษ์ ในเขตเทศบาลเมืองหนองคาย
13.46-14.00 น.	*ปนัดดา คุ้มครอง*
C2006	การศึกษาระดับปัจจัยทางการตลาดที่มีผลต่อการเลือกซื้อวัสดุอุปกรณ์ก่อสร้าง บริษัท หนองคาย คอนกรีต โปรดักส์ จำกัด
14.01-14.15 น.	*อรุณ หงษ์แก้ว*
C2007	ปัจจัยทางการตลาดที่ส่งผลต่อพฤติกรรมซื้ออาหารและเครื่องดื่มของผู้บริโภคในร้านเคเอฟซี สาขาบิ๊กซีเลย ในอำเภอเมืองเลย จังหวัดเลย
14.16-14.30 น.	*เรืองวรีย์ กินรีวงศ์*

Please note that the schedule is subject to change under certain circumstances.
*Update program on http://icteched.fte.kmutnb.ac.th and http://ncteched.fte.kmutnb.ac.th

กลุ่มที่ 5 บัญชี-การตลาด	ห้อง E
C1019	การศึกษาเกี่ยวกับการวางระบบบัญชีกับการจัดทำบัญชีของผู้ประกอบการพาณิชย์ในจังหวัดหนองบัวลำภู
09.31-09.45 น.	*สิริญาฌี ปักกัดตัง, ปิยฉัตร ทองขำ*
C1020	การศึกษาความต้องการพัฒนาความรู้ทางวิชาชีพผู้ประกอบการวิชาชีพการบัญชีในจังหวัดเลย
09.46-10.00 น.	*นฤมล สายจำปา, พรประชา อุนราช, บุสสดี พรหมศรีจันทร์*
C1021	ศึกษาต้นทุนการผลิตและผลตอบแทนของของสินค้า OTOP มะพร้าวแก้ว อำเภอเชียงคาน จังหวัดเลย
10.01-10.15 น.	*ศศิประภา แก้วจำปา, อภิญญา ราคาแพง, พิมพกานต์ วงษ์ป้อง*
C1022	การศึกษาคุณสมบัติของนักบัญชีที่พึงประสงค์ของสำนักงานบัญชีในเขตอำเภอเมือง จังหวัดเลย
10.16-10.30 น.	*สาวิตรี ภามี, สุภาวดี หัสดา, อริสรา บาบุญ*

กลุ่มที่ 5 บัญชี-การตลาด	ห้อง E
C1023	ปัจจัยที่ส่งผลต่อการปฏิบัติงานของพนักงานบัญชีในสถานการณ์ Covid-19 ของธุรกิจอุตสาหกรรมกลุ่มจังหวัดภาคตะวันออกเฉียงเหนือตอนบน 1
10.31-10.45 น.	*อรรถพล การิสุข, พิพวรรณ วิจิตรพล*
C1025	ปัจจัยที่มีผลต่อการตัดสินใจเลือกใช้บริการสำนักงานอาร์ทีการบัญชี อำเภอเมือง จังหวัดอุดรธานี
10.46-11.00 น.	*จินตนา มาพลัน, ระเบียบ ทุนรวม, สุคารัตน์ มะลิงาม*
C1026	ปัจจัยที่มีผลต่อการจัดทำบัญชีครัวเรือนในสถานการณ์โควิด–19 : กรณีศึกษา บ้านหนองเจริญ ตำบลขอนยูง อำเภอกุดจับ จังหวัดอุดรธานี
11.01-11.15 น.	*วิไลพร เนตนี, ชรินรัตน์ จำปาเทศ*
C1029	ปัจจัยที่ส่งผลต่อการกำหนดค่าบริการทำบัญชีของสำนักงานบัญชีในจังหวัดบึงกาฬ
11.16-11.30 น.	*อรัชพร สมดีดี, ขวัญข้าว เจริญดี*
C1030	ประสิทธิภาพของนักบัญชียุคดิจิทัลของสถานประกอบการในเขตพื้นที่จังหวัดหนองคาย อุดรธานี หนองบัวลำภู เลย และบึงกาฬ
11.31-11.45 น.	*ปัทมาวรรณ หนูกลาง, ปรียานุช สุตตะนนท์, เกษร สีมืด*
C2001	การศึกษาพฤติกรรมของลูกค้าในการเลือกใช้บริการสั่งอาหารแบบเดลิเวอรี่ผ่านแอพพลิเคชัน foodpanda ของลูกค้าในเขตเทศบาลเมืองหนองคาย
11.46-12.00 น.	*นายก้านหยก วุฑฒิโกวิทย์*
C2002	การศึกษาพฤติกรรมทางการตลาดที่มีผลต่อการตัดสินใจซื้อสินค้าจากร้าน 7-ELEVEN ของผู้บริโภคในเขตเทศบาลเมืองหนองคาย
13.01-13.15 น.	*เกษรินทร์ ตุระวิภาค*
C2003	การศึกษาความพึงพอใจต่อการสั่งซื้ออาหารแบบเดลิเวอรี่ผ่านแอพพลิเคชัน foodpanda ของลูกค้าในเทศบาลเมืองหนองคาย
13.16-13.30 น.	*ชัยชนะ เบ้าสิงห์สวย*
C2004	การศึกษาปัจจัยที่มีผลต่อการใช้บริการผ่านแอพพลิเคชัน foodpanda ของลูกค้าในเทศบาลหนองคาย
13.31-13.45 น.	*นาคอน เพลียขุนทด*
C2005	การศึกษาพฤติกรรมผู้บริโภคในการตัดสินใจซื้อสินค้าร้าน The Pizza Company สาขาถนนประจักษ์ ในเขตเทศบาลเมืองหนองคาย
13.46-14.00 น.	*ปนัดดา คุ้มครอง*

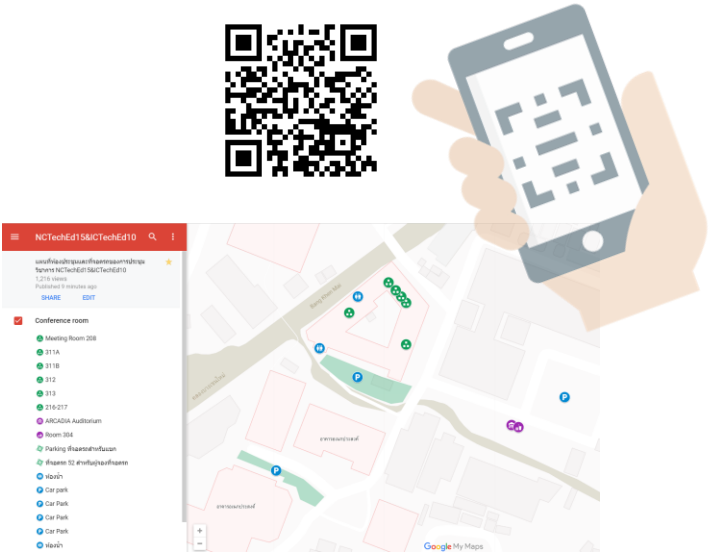
กลุ่มที่ 5 บัญชี-การตลาด	ห้อง E
C2006	การศึกษาระดับปัจจัยทางการตลาดที่มีผลต่อการเลือกซื้อวัสดุอุปกรณ์ก่อสร้าง บริษัท หนองคาย คอนกรีต โปรดักส์ จำกัด
14.01-14.15 น.	*อรุณ หงษ์แก้ว*
C2007	ปัจจัยทางการตลาดที่ส่งผลต่อพฤติกรรมซื้ออาหารและเครื่องดื่มของผู้บริโภคในร้านเคเอฟซี สาขาบิ๊กซีเลย ในอำเภอเมืองเลย จังหวัดเลย
14.16-14.30 น.	*เรืองวรีย์ กินรีวงศ์*

Please note that the schedule is subject to change under certain circumstances.

*Update program on http://icteched.fte.kmutnb.ac.th and http://nctеched.fte.kmutnb.ac.th

Map

https://goo.gl/k6KVD1



5(52) *FTE Building*
23(41) *Faculty of Architecture and Design Building*

Contents

Electrical Engineering and Education

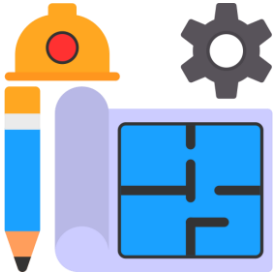
Engineering and Technical Education

Vocational and Technical Education

ICTechED10

NCTechED15

15th National Conference on Technical Education



Civil Engineering and Education

สาขาวิศวกรรมโยธา และการศึกษา

NCTechED15 **CEE01-CEE08**

CEE01:NC058

Study on Abrasion Resistance of Difference in Concrete Compressive Strength

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The purpose of this research was to determine the abrasion resistance effect of concrete at 210 - 400 kg/cm2. It is used to evaluate the method of selecting the compressive strength to suit the characteristics of the building members. by studying the resistance to abrasion of concrete Tested in accordance with ASTM C944, which uses Portland cement type 1 and specifies 5 types of concrete compressive strength: 210,240,280,350,400. kilograms per square centimeter Method for testing concrete compressive strength according to ASTM C39 by controlling the aging of concrete samples 28 days after the expiration of the specified period. Take the test sample according to ASTM C944 and compare the relationship between the weight of the sample and the concrete compressive strength. In this research, it was found that the relationship between concrete compressive strength and abrasion resistance was analyzed by Pearson correlation coefficient data. It was found that the concrete compressive strength and abrasion resistance test have a negative correlation That is, if the compressive strength of concrete decreases, its abrasion resistance will decrease accordingly.

Online full paper: **https://bit.ly/43pAMiQ**

CEE02:NC078

Study on Shear Strength of MICP-Treated Sand Reinforced with Vetiver Grass

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This research presents the results of shear strength of MICP-treated sand reinforced with vetiver grass to prevent soil erosion. The conventional direct shear tests were divided into four sample types, including untreated sand, sand reinforced with vetiver grass, MICP-treated sand, and MICP-treated sand reinforced with vetiver grass. The vetiver grass used in these tests was Vetiveria zizanioides Nash var. Songkhla 3 and the bacteria used for quality improvement were Bacillus pasteurii or Sporosarcina pasteurii (ATCC 6453). The experiment showed that the shear strength increased with the increasing quantity of vetiver grass. The treated SV4B gave the highest shear strength and increased the cohesion to 8.6 times that of the untreated sand. SEM and EDX were used to analyze microstructure changes in sand. The findings indicated that the increase in sediment calcium carbonate (CaCO3) formed within the sand structure influenced the shear strength of MICP-treated sand.

Online full paper: **https://bit.ly/3BXcDnK**

CEE03:NC042

Study The Movement Behavior of Particle in The Ribbon Mixer Affected By the Particle Loading Arrangement, Mixing Rotational Speed, And Static Friction of The Particle with DEM Method

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The mixing of material particles is a vital operation in numerous industrial applications such as pharmaceuticals, polymers, ceramic, cosmetics, food, agricultural and mineral processing. There must be a trial mix of product samples before start production to determine the parameters related to the mixing process that are suitable for that product such as material loading arrangement, mixing rotation speed, mixing time, etc. In order to reduce costs and reduce the time for the process that will occur in this process the Discrete Element Method (DEM) analysis process was used to create various models. to study the effects of various parameters on mixing quality The Coefficient of Variation (CoV) of homogeneity describes that the relationship of standard deviation and average. In order to examine the effect of particle loading arrangement on mixing quality, top-bottom loading arrangement cannot be described by the Coefficient of Variation (CoV) equation. In case of left-right particle loading arrangement, particle has the same size. The static friction of the materials are the same. The speed used in the mixing rotation affects the mixing quality as follows. The velocities used in the analysis were 25, 50, 75, and 100 rpm., analysing the mixing blade rotation from 0 to 20 revolutions, the CoV of all velocities tended to approach zero nearby. In case of left-right particle loading arrangement, particle has the same size. The speed used to rotate the mixer is the same. The static friction of the materials affected the mixing quality as follows: The analytical mixing rotation speed was 75 rpm., material particle with low coefficient of static friction (μs) values (μs= 0.2) CoV tended to approach zero the fastest. For material particle with a high coefficient of static friction (μs) value (μs= 1.0), the CoV value approaches zero last.

Online full paper: **https://bit.ly/434K8AB**

Relationship Between Modulus of Elasticity and Compressive Strength of Concrete for Bangkok Metropolitan Region

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The purpose of this research was to study the relationship between modulus of elasticity and compressive strength of concrete. By considering from concrete samples of construction projects requesting service for compressive strength testing in Bangkok Metropolitian Region. The compressive strength at the age of 28 days, compressive strength range 217.09 – 504.75 ksc, 46 samples, size of cylindrical, diameter 15 cm, height 30 cm (ASTM C192) were used to test the compressive strength of concrete according to ASTM C39 and testing the elastic modulus of concrete according to ASTM C469 to determine the relationship between modulus of elasticity and compressive strength of concrete. According to the research results, it was found that the value obtained from the test was the elastic modulus in the range of 145,772 – 329,318 ksc. The testing results indicate that the relationship between modulus of elasticity and the compressive strength of concrete was obtained from the test. The direction of the curve is in the same direction as the ACI 318 standard.

Online full paper: **https://bit.ly/3MUWhTh**

CEE05:NC105

Study On Behavior of Alumina Powder Affecting Surface Roughness in Lapping Process for Brass Material C3604

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This objective of research was studied the Study on behaviour of alumina powder affecting surface roughness in lapping process for brass material C3604. Factorial experiment was applied to analyse the four-alumina powder size of 0.05, 0.30, 1.00, 3.00 µm and six-lapping time of 30, 60, 90, 120, 150, 180 minutes, respectively. In preparing of specimen surface roughness for experimental, was used the ratio between the alumina powder of 400 ml, alumina powder lubricant of 400 ml and water of 2 litter was to prepare the specimen to obtain the average surface roughness (Ra) of 0.10 - 0.50 µm. Statistical analysis found that the lapping process with 0.30 µm abrasive powder, which took 90 minutes to polish, resulted in the arithmetic mean surface roughness (Ra) getting the arithmetic mean surface roughness on the x-axis at 0.1132 µm. (Desirability: D) Regarding statistical processing, it was found that the value was as high as 92.24% and the arithmetic average roughness of the y-axis was 0.1076 µm. (Desirability: D) Regarding statistical processing, it was found that the value was as high as 81.68%.

Online full paper: **https://bit.ly/423HBp5**

CEE06:NC106

Study on Alumina Powder Using Lapping Techniques Affecting Surface Roughness Quality for Material Aluminum 6063

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This objective of research was studied the Study on alumina powder using lapping techniques affecting surface roughness quality for material aluminium 6063. Factorial experiment was applied to analyse the four-alumina powder size of 0.05, 0.30, 1.00, 3.00 µm and six-lapping time of 30, 60, 90, 120, 150, 180 minutes, respectively. In preparing of specimen surface roughness for experimental, was used the ratio between the alumina powder of 400 ml, alumina powder lubricant of 400 ml and water of 2 litter was to prepare the specimen to obtain the average surface roughness (Ra) of 0.10 - 0.50 µm. Statistical analysis found that the lapping process with 1.00 µm abrasive powder, which took 90 minutes to polish, resulted in the arithmetic mean surface roughness (Ra) getting the arithmetic mean surface roughness on the x-axis at 0.4612 µm. (Desirability: D) Regarding statistical processing, it was found that the value was as high as 55.83% and the arithmetic average roughness of the y-axis was 0.2492 µm. (Desirability: D) Regarding statistical processing, it was found that the value was as high as 89.91%.

Online full paper: **https://bit.ly/3ovZ6Rd**

CEE07:NC107

Study On the Influences of Alumina Powder on Surface Quality by Lapping Technique for Stainless Steel Material JIS 420

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This objective of research was studied the Study on the Influences of alumina powder on surface quality by lapping technique for stainless steel material JIS 420. Factorial experiment was applied to analyze the four-alumina powder size of 0.05, 0.30, 1.00, 3.00 µm and six-lapping time of 30, 60, 90, 120, 150, 180 minutes, respectively. In preparing of specimen surface roughness for experimental, was used the ratio between the alumina powder of 400 ml, alumina powder lubricant of 400 ml and water of 2 liter was to prepare the specimen to obtain the average surface roughness (Ra) of 0.10 - 0.50 µm. Statistical analysis found that the lapping process with 0.30 µm abrasive powder, which took 120 minutes to polish, resulted in the arithmetic mean surface roughness (Ra) getting the arithmetic mean surface roughness on the x-axis at 0.0784 µm. (Desirability: D) Regarding statistical processing, it was found that the value was as high as 86.87% and the arithmetic average roughness of the y-axis was 0.0670 µm. (Desirability: D) Regarding statistical processing, it was found that the value was as high as 86.29%.

Online full paper: **https://bit.ly/3ID1Nr8**

Study on Alumina Powder Factors Affecting Surface Roughness by Lapping Technique for Stainless Steel Material JIS 440

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This objective of research was studied the Study on alumina powder factors affecting surface roughness by lapping technique for stainless steel material JIS 440. Factorial experiment was applied to analyze the four-alumina powder size of 0.05, 0.30, 1.00, 3.00 µm and six-lapping time of 30, 60, 90, 120, 150, 180 minutes, respectively. In preparing of specimen surface roughness for experimental, was used the ratio between the alumina powder of 400 ml, alumina powder lubricant of 400 ml and water of 2 liter was to prepare the specimen to obtain the average surface roughness (Ra) of 0.10 - 0.50 µm. Statistical analysis found that the lapping process with 1.00 µm abrasive powder, which took 30 minutes to polish, resulted in the arithmetic mean surface roughness (Ra) getting the arithmetic mean surface roughness on the x-axis at 0.0630 µm. (Desirability: D) Regarding statistical processing, it was found that the value was as high as 90.62% and the arithmetic average roughness of the y-axis was 0.0688 µm. (Desirability: D) Regarding statistical processing, it was found that the value was as high as 90.28%.

Online full paper: **https://bit.ly/3BTtmIQ**

Information Technology and Education

สาขาเทคโนโลยีสารสนเทศและการศึกษา

NCTechED15 **ITE01-ITE31**

ITE01:NC071

The Comparison of The Learning Outcomes of Engineering Materials Subject of Students in College of Industrial Technology King Mongkut's University of Technology North Bangkok

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The aims of research are compare the result of Engineering Materials subject from undergrad students, 331 people, who qualifying exam to College of Industrial Technology, King Mongkut's University of Technology North Bangkok in 2020 from 4 different projects. There are the good study quota project for high school students and good study quota for vocational certificate students for 195, the Written Direct Admission Program students for 115 and the direct selection program uses General Aptitude Test (GAT), and Professional and Academic Aptitude Test (PAT) points for 21. Methodology of research is 4-choice multiple-choice Engineering Materials exams, 50% midterm exam and 50% final exam. The researcher took a purposive sampling from the 4 different projects, 20 people per project, to analyze Average and Standard Deviation. The results showed that the good study quota project for high school students and good study quota for vocational certificate students is mean1=65.40 and SD1 = 9.55, Written Direct Admission Program high school students is mean2=60.57 and SD2 = 9.79. Written Direct Admission Program vocational certificate students is mean3=59.12 and SD3 = 9.86, and the direct selection program uses General Aptitude Test (GAT) and Professional and Academic Aptitude Test (PAT) points is mean4=61.82 and SD4 = 7.68. After that, Data from the experiment were analyzed to test the hypothesis using the mean of the population from 3 or more groups. The summary research shown that the result of Engineering Materials subject from undergrad students, 4 different projects, did not different in academic results at the significance level .05.

Online full paper: **https://bit.ly/43i4RR2**

ITE02:NC082

Development of an Instructional Package for the Subject “Basic Machine Tools” Subject Code 20100-1007, Based on the Vocational Certificate Curriculum Issued in 2562 B.E. (Revised 2565 B.E.) In the Industry Category by the Office of the Vocational Educatio

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The purposes of this study were to 1) develop an instructional package, 2) determine the effectiveness of the instructional package, 3) compare student learning achievement before and after using the instructional package, and 4) determine student satisfaction with the instructional package. The instructional package created in this study was designed for the subject "Basic Machine Tools," which has the subject code 20100-1007 and is based on the vocational certificate curriculum issued in 2562 B.E. (revised 2565 B.E.) in the industry category by the Office of the Vocational Education Commission of the Ministry of Education. The sample used in this study consisted of 14 second-year Vocational Certificate students purposively selected from among the Electrical Power students enrolled in the Machine Tool subject at Phang-nga Technical College, Institute of Vocational Education Southern Region 2, during Semester 2 of the 2565 B.E. academic year. The instruments used in this study are the instructional package for the subject "Basic Machine Tools", which consists of the following 4 units: 1) sawing machine and sawing works, 2) grinder and grinding woks, 3) lathe and lathe works, and 4) drill and drilling and reaming works, developed by the author in digital form (PDF) and summarized in the form of electronic books. The data collection instruments used were 4 sets of quality evaluation forms for experts and teachers, a learning achievement test for students, and a satisfaction evaluation form for students. The statistical methods used in this study were percentage, average, standard deviation, and t-test. The result of this study showed that all four units of the instructional packages, Unit 1 to Unit 4, had an average efficiency of 81.57/80.68, which is the standard of 80/80. The comparison of learning achievement before and after learning with the instructional package showed that students' performance was significantly higher at a value of .05 than before learning. In addition, students' satisfaction with the learning package is high (mean = 4.16, S.D. = 0.61).

Online full paper: **https://bit.ly/43lpkVl**

ITE03:NC019

Finding Achievements in Project-Based Learning Management in Business and Entrepreneurship Courses in Business Computer students of Sri Songkhram Industrial Technology College, Nakhon Phanom University

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The purposes of this research were 1) design a project-based learning management process in the business and entrepreneurship subjects, 2) study the learning achievement in the business and entrepreneurship subjects. 3) assess the quality of student projects that receive project-based learning, and 4) study the level of satisfaction of students who receive project-based learning. students to the project-based learning management process in the subject of business and entrepreneurship The sample group in this research was 22 third year vocational certificate students, semester 2/2022, by purposive sampling. The research tools were the project-based learning management plan. Achievement test and the quality assessment form of the project and the quality assessment of the project, including mean, standard deviation and t-test.

The research findings were as follows: 1) the learning plan in the business and entrepreneurship subjects It consists of 6 steps of project-based learning management: preparation; Defining and selecting topics project outline writing project performance presentation 2) Post-learning achievement of students was significantly higher than before at the .05 level of significance. 3) Quality of student projects that received project-based learning management activities. and 4) the students' satisfaction towards the project-based learning management process was at a high level.

Online full paper: **https://bit.ly/3q95Hlb**

ITE04:NC066

Data Mining Techniques for Forecasting Student Academic Performance Vocational certificate, Srisongkhram Industrial Technology College Nakhon Phanom University

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The purposes of this research were 1) to study data mining techniques and apply them in education, 2) to compare the efficiency of data for predicting students' basic learning outcomes. By collecting data of 1st year vocational certificate students using 3 methods of data mining such as Random Forest, K-Nearest Neighbors and Deep Learning. All data was gotten by Registration and Evaluation Section, Academic Department, Sri Songkhram Industrial Technology College, Nakhon Phanom University. The data was gotten amount of 772 sets of records since 2016 to 2020. RapidMiner Studio Program was used to related factors analysis. Moreover, 10-Fold Cross Validation method was used to effective test. The results show that the classification data with the highest accuracy by random forest method was 99.87%. And Next is K-Nearest Neighbors Method is about 87.31%. The least accuracy is Deep Learning methods at 70.21. It is summarized that the data can use for learning achievement prediction of students.

Online full paper: **https://bit.ly/425FUaL**

ITE05:NC039

The Develop a Learning Management Plan with Design Thinking Process together with Online Lessons in Design and Technology Courses Junior High School to Promote the Creative Problem Solving

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The purposes of the research were 1) to develop a learning management plan with design thinking process together with online lessons in design and technology courses junior high school to promote the creative problem solving, 2) to compare the learning achievement of students before and after learning with design thinking process together with online lessons, 3) to evaluate the creative problem solving skills of students after learning with design thinking process together with online lessons, and 4) to study student's satisfaction who study with design thinking process together with online lessons. The samples of the study were 44 in grade 2 room 5 of Buranarumluk School in the second semester of the academic year 2022. Data were analyzed using statistics including percentage, mean and standard deviation. Hypotheses were tested using statistics including t-test.

The results of this study indicated as follows: 1) The developed a learning management plan with design thinking process together with online lessons of five steps; 1) Empathize, 2) Define, 3) Ideate, 4) Prototype, and 5) Test, 2) Learning achievement of the sample taught with the design thinking process together with online lessons was higher than before with a statistical significance level of .05, 3) The students creative problem solving skills appeared after studying with the design thinking process together with online lessons were found that at very good level (average = 4.70, S.D. = 0.19), and 4) The students were satisfied with the design thinking process together with online lessons at the high level (average = 4.33, S.D. = 0.34).

Online full paper: **https://bit.ly/431nAk5**

ITE06:NC015

An Efficiency Comparison of Data Classification with Data Mining Techniques in Study Plan Prediction for Upper Secondary Admission in Suranari Wittaya School

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In this research, the results of comparing the performance of data classification techniques using 3 data mining techniques, namely Decision Tree, Random Forest, and k-Nearest Neighbor (k-NN), were presented. The algorithm with the highest performance was selected to be used as a study plan prediction system for upper secondary admission at Suranari Wittaya School. The study utilized a selection study plan result dataset consisting of 1,772 records from former 9th-grade students during the academic years 2020-2022. The research findings demonstrate that the Random Forest algorithm exhibited superior efficiency, achieving an accuracy rate of 80.81%, precision rate of 91.09%, and recall rate of 69.88%. The Decision Tree algorithm and the k-Nearest Neighbor algorithm followed, achieving accuracy rates of 73.31% and 70.20%, precision rates of 71.21% and 66.98%, and recall rates of 59.14% and 52.44%, respectively.

Online full paper: **https://bit.ly/3pZe5Ds**

ITE07:NC074

Comparison of Data Classification Performance to Predict the Selection of Majors to Study for A Bachelor's Degree With Data Mining Techniques

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The purpose of this research was to study a comparative method for the efficiency of data classification to predict the selection of undergraduate study fields. with data mining techniques and create and compare the performance of Data Classification Performance Comparison Model to predict the selection of majors to study for a bachelor's degree with data mining techniques The researchers collected 2,835 records of enrolment data from 2017 to 2022 with 17 attributes and used the text mining process with RapidMiner10. Random Forest, Gradient Boosted Trees, and Naive Bayes techniques. Accuracy, Precision, and Recall from the experimental results showed that the use of the Naive Bayes technique yielded the highest results of 100%.

Online full paper: **https://bit.ly/3MQV6nM**

ITE08:NC051

The Development of a Website for Muangloei OTOP Shop

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The purpose of this research were 1) to promote marketing for OTOP products in Loei Province. 2) To develop the website of Muang Loei OTOP Shop. 3) To study the satisfaction of using the website, Muang Loei OTOP Shop. The sample group is 80 people in Loei Province who access the website. Research Instrument was a satisfaction survey about of using of a website OTOP Shop. Data analysis of statistics were used by a packaged program for research to find percentage, mean, Standard Deviation (S.D.), divided into 3 parts. 1) Results of data analysis. 2) The results of the analysis of satisfaction in using of a website for Muang Loei OTOP Shop. 3) the results of the analysis of the recommendations in using of a website for Muang Loei OTOP Shop. the research found that the satisfaction of the sample population using the website which had the highest overall satisfaction in the picture (mean =4.18, S.D.=0.65). In aspect of utilization (mean =4.23, S.D.=0.68), content quality (mean =4.20, S.D.=0.63), website design and layout (mean =4.14, S.D.=0.64), ease of access to information (mean =4.14, S.D.=0.72)

Online full paper: **https://bit.ly/3q5pYYO**

ITE09:NC052

A Development Of Web Application In 360-Degree Virtual Reality To Promote Cultural Tourism In Chiang Khan District Loei Province

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This research proposes 1) a Developmet of Web Application in 360-degree virtual reality to Promote Cultural Tourism in Chiang Khan District, Loei Province. 2) to evaluate the satisfaction of the 360-degree virtual reality web application system. The sample group used the purposive selection method for the system satisfaction assessment groups that the number of tourists is 217 travelling to Chiang Khan District, Loei Province. The researcher uses 3D Vista as a system development tool, and multimedia creation tools. Next, the system satisfaction evaluation form for the statistics used in the analysis is the average and standard deviation. The research found that People in Loei Province who access the website to organize learning activities by developing a website to promote cultural tourism in Chiang Khan District, Loei Province. Website quality assessment results from the sample group including 4 aspects, it was found that was at a high level (mean = 4.40, S.D. = 0.54). Design (mean = 4.46, S.D. = 0.57), public relations (mean = 4.43, S.D.= 0.64), safety (mean = 4.38, S.D. = 0.66) and function according to the function of the program (mean = 4.31, S.D. = 0.65) were at a high level, respectively.

Online full paper: **https://bit.ly/43kJoXO**

Development of Information Management System on Web Applications for Nongwa Wittayasan School

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This research the objective were to develop Information Management Systems on the Web Application for Nongwa Witthaya San school and to Study satisfaction to ward Information Management Systems on the Web Application for Nongwa Witthaya San School. Target group is 18 persons including administrators, teachers, Nongwa Witthaya San School' personnel. Research tools consists of 1) information management systems on the web application for Nongwa Witthaya San School, 2) quality evaluation form of the information management systems on the Web Application for Nongwa Witthaya San School by experts, and 3) satisfaction assessment form of information management systems on the Web Application for Nongwa Witthaya San School. The results of the research showed that 1) the result of the development of the information management system on the web application Nongwa Wittayasan School It is in accordance with the system development life cycle (SDLC) research process, 2) the results of the quality assessment of the information management system on the web application Nongwa Wittayasan School in very good quality level, and 3) the results of the satisfaction for the information management system on the web application of Nongwa Wittayasan School is very appropriate.

Online full paper: **https://bit.ly/436nmbC**

ITE11:NC102

Web Application Development of Kuanwan Health Promotion Hospital Nongkhai Province

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Web Application development of Kuanwan health promotion hospital Nongkhai Province, aimed to create the web application of Kuanwan health promotion hospital Nongkhai Province, and examine users' satisfaction of the web application of Kuanwan health promotion hospital Nongkhai Province. The sample used in obtaining satisfaction score included 50 users of the web application Kuanwan health promotion hospital Nongkhai Province, from Krejcie & Morgan formula with accidental sampling. The researchers developed the web application of Kuanwan, Various elements of the web application of Kuanwan health promotion hospital Nongkhai Province, consisted of the public relations page to report activities and news, history, name list of personnel, appointment booking service, and daily treatment schedule. The study found that the overall satisfaction with development of the web application of Kuanwan health promotion hospital Nongkhai Province, had the average of 4.23 Considering each aspect, it was found that the aspect with the highest score was content, rated as good level with the average of 4.35 The second highest score was website design, rated as good level with the average of 4.24 The following was booking system security, rated as good level with the average of 4.18 The lowest satisfaction score was booking efficiency, rated as good level with the average of 4.14

Online full paper: **https://bit.ly/3MoMsLK**

ITE12:NC021

Web Application Development, Booking System for Visiting Sala Kaew Ku Nong Khai Province

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This study aims to For the development of a web application for a reservation system for visiting Sala Kaew Ku. Nong Khai Province and to study the satisfaction with using the web application of the reservation system for visiting Sala Kaew Ku. Nong Khai Province The population groups used in this research were tourists who visited Sala Kaew Ku. Nong Khai Province by from the Crazy Morgan table From random random sampling of 80 people, the tool used in this study was the web application for a reservation system for visiting Sala Kaew Ku. Nong Khai Province developed with Visual Studio Code and the satisfaction questionnaire Web application development, booking system for visiting Sala Kaew Ku Nong Khai Province. The results of the study revealed that the level of satisfaction towards the web application for booking queue system to visit Sala Kaew Ku Nong Khai Province The overall picture is at a high level. The mean value was 4.38 When considering each aspect, it was found that the aspect that had the highest value was the design satisfaction at a high level. The mean was 4.46, followed by the satisfaction of using the booking queue was at a high level. The mean was 4.43, and the least valuable aspect was the high satisfaction of safety. The mean is 4.31.

Online full paper: **https://bit.ly/3CbdQIB**

ITE13:NC030

Creating A Web Application for Notification System for Repairingmobile Phone Equipment at JJ Phone Shop

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Creating A Web Application For Notification System For Repairingmobile Phone Equipment At JJ Phone Shop has the objectives 1) To create a web application for notification system for repairing mobile phone equipment at JJ Phone Shop. 2) To assess the quality of the mobile phone repair notification system at JJ Phone Shop by experts. 3) To study the satisfaction of the players towards the creation of a web application of a mobile phone repair notification system at JJ Phone Shop. The sample group in this research is the sample group. 91 customers who come to use the web application of the mobile phone repair notification system at JJ Phone Shop Acquired by random random method From a group of users who like online, the tools used in research are 1) Notification of repairing mobile phone equipment at JJ Phone Shop. 2) Questionnaire on satisfaction with the use of creating an application for notification of repairing mobile phone equipment at JJ Phone Shop by analyzing data. Statistics, percentage, mean and standard deviation (S.D.) The results showed that 1. Evaluation results of web application quality, notification system for repairing mobile phone devices, JJ Phone Shop It was found that the overall experts were at a very high quality level (mean = 4.33, S.D. = 0.72) 2. Results of the satisfaction assessment of the sample group To the web application, notification system for repairing mobile phone devices, JJ Phone Shop found that the overall satisfaction was at the highest level (mean = 4.50, S.D. = 0.71)

Online full paper: **https://bit.ly/428fODQ**

ITE14:NC073

Development of Personnel Database System for Protected Area Regional Office 10 (Udonthani)

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Development of personnel database system for protected of Area Regional office 10 (Udonthani) has the objectives 1) to development of personnel database system for protected of Area Regional office 10 (Udonthani) 2) to study the results of the quality assessment on development of personnel database system for protected of Area Regional office 10 (Udonthani) by experts 3) to study the satisfaction of employees towards the development of a development of personnel database system for protected of Area Regional office 10 (Udonthani) the target groups in this research There were 15 employees of protected of Area Regional office 10 (Udonthani) The tools used in the research were 1) development of personnel database system for protected of Area Regional office 10 (Udonthani) 2) Quality assessment on development of personnel database system for protected of Area Regional office 10 (Udonthani) by experts 3) the satisfaction assessment form of users towards the personnel database system for protected of Area Regional office 10 (Udonthani) The analysis was done using statistical data, percentage, mean and standard deviation (S.D.) The results showed that 1. The results of the quality assessment of the personnel database system of the Office of Conservation Area Administration 10 (Udonthani) found that the experts overall were in a very good level (mean = 4.68, S.D. = 0.49) 2. The results of the satisfaction assessment of the users of the web application of the Mahachai Udonthani store stock check system. There were 4 aspects of satisfaction assessment. It was found that overall satisfaction was at the highest level (mean= 4.59, SD. = 0.71)

Online full paper: **https://bit.ly/3MTG7cD**

ITE15:NC076

A Study of Teaching Results by Using Boardgames in Conjunction with Gamification Learning Environment to Enhance Problem Solving Thinking in Computing Science for Late Elementary School

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The objectives of this research were: 1) to assess the efficiency of board games in conjunction with the developed gamification environment; 2) To compare the learning skills of students' study approaches before and after learning with board games; and 3) To study the student's satisfaction towards the developed board game . The samples used in this research were Grade 6 students, semester 2, academic year 2022, Watsrisudaram School Bangkok Noi District Office Bangkok, 30 people by purposive sampling. The tools used in this research consisted of: 1) a board game in computational science; 2) a board game quality assessment form; 3) a learning management plan; 4) a pre - and post-test; and 5) a student satisfaction questionnaire. Statistics used in data analysis were percentage, mean, and standard deviation. The hypothesis testing statistic is the t-test. The results of this study indicated as follows.1) Efficiency of board games in conjunction with gamification environment to promote students' problem-solving skills in the developed computational science subjects is efficient. The develops efficiency is 81.50/82.33, which is higher than the criteria set for 80/80. 2) The learners' learning achievements after learning with the improved board game was higher than before learning at a statistical significance level of .05 3) The students' satisfaction towards the developed board game was high. At the highest level (mean = 4.53, S.D. = 0.65)

Online full paper: **https://bit.ly/3OCMySH**

ITE16:NC031

Finding the Quality of CAI Learning Materials with Constructivist Concepts. on The Development of Communication Technology for Matthayom 2 Students

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The objectives of this research were 1) to determine the quality of CAI learning materials combined with constructivist concepts on developments in communication technology for Mathayomsuksa 2 students Finding the quality of learning media on CAI lessons with constructivist concepts on developments in communication technology for Mathayomsuksa 2 students. The target group consisted of 5 experts in constructivist concepts. Person with at least 5 years of experience by selective selection method The research tool was to determine the quality of CAI learning materials combined with constructivist concepts on developments in communication technology for grade 12 students. and a questionnaire to evaluate the suitability of finding the quality of CAI learning media with constructivist concepts on developments in communication technology for Mathayomsuksa 2 students. The statistics used in the research were mean. and standard deviation The results of the research were as follows: 1) The search for the quality of CAI learning materials combined with constructivist concepts on the development in communication technology consisted of 8, namely, lesson introduction pages; login registration page main menu page objective page Important page Lesson preview page Pre-test preview page Post-test sample page 2) The overall suitability assessment was at a high level. (Mean = 4.06 , S.D. = 0.15) .

Online full paper: **https://bit.ly/3IEEoFE**

ITE17:NC043

Develop Planning Skills Using Computer Instruction on Basic Application Development for Students in Grade 9 Student

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The objectives of this research were 1) to develop planning skills using computer instruction on basic application development for students in grade 9 student, 2) to find the efficiency of learning media with computer instruction on application development for Grade 9 student, and 3) to compare learning achievements before and after learning management with computer instruction on application development. The target group was 35 Grade 9 student and 5 learning media design experts by using simple random sampling. The tool used for research was 1) the design of learning materials on the subject of learning media design on application development to develop planning skills for Grade 9 student. The statistical data used in this study were the mean and the standard deviation.

The results of the research were found that 1) the development of planning skills by using computer instruction on basic application development For Grade 9 student consisted of 6 components which expert opinions on the suitability of the overall system were at a very good level, 2) the results of the assessment of the suitability of developing planning skills with computer instruction on basic application development for Matthayomsuksa 3 students by having 5 experts in learning media design found that the total evaluation results were at a high level (mean =4.26, S.D =0.43), and 3) the comparison of learning achievements before and after learning management with computer instruction on application development for Grade 9 student, it was found that learning outcomes were significantly higher than pre-learning outcomes at the 0.5 level.

Online full paper: **https://bit.ly/3IDgbPM**

ITE18:NC045

The Development of Board Game Associated with Augmented Reality Technology for Matthayom 1 Students

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The purposes of this research were 1) to develop a board game associated with virtual reality technology, 2) to compare the learning achievement before and after by using board games and virtual reality technology, 3) to study the level of students' acceptance of board games associated with virtual reality technology. The samples were 37 students who were Matthayomsuksa 1 level, Municipal School 1, Ban Cha-am (Cha-am Wittayakarn). The samples selected by simple random sampling method. The results showed that 1) Learning outcomes using board games combined with augmented reality technology about technology around Efficiency according to E1/E2 = 81.22/80.81 which was higher than the 80/80 criterion that was set according to the assumptions, 2) The learning achievement after learning, the score (mean = 32.27, S.D. = 3.95) was higher than the score before learning (mean = 21.03, S.D. = 8.30) significantly at the .01 level, 3) Learners have a level of acceptance for learning with board games associated with virtual reality technology at the highest level (mean = 4.51, S.D. = 0.38).

Online full paper: **https://bit.ly/3OAQymA**

ITE19:NC046

Gamification Learning Achievement Computational Science Course on Problem Solving with Flowcharts for Prathomsuksa 4 Students

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This research aims to 1. To develop and determine the efficiency of computer game media on problem solving with flowcharts of Prathomsuksa 4 students at Municipal School 6 Ban Huay Sai Nuea. To be effective according to the 80/80 2 criterion to develop academic achievement before and after school. in the subject of computational science problem solving with flowcharts 3. To study the student's satisfaction with computer game media of Prathom Suksa 4 students at Municipal School 6 Ban Huay Sai Nuea in organizing teaching and learning activities with computer game media to be effective according to the 80/80 criterion. Problem Solving with Work Plans of Prathom Suksa 4 Students at Ban Huay Sai Nuea Municipal School to be effective according to the 80/80 criterion. The results of the research revealed that 1) from the introduction of game media to teach about Problem-solving with flowcharts divided into three topics, totaling 70 pages, with content and summaries, is the student's achievement. 2) Learning achievement after learning with a computer game on problem solving with workflows of Prathom Suksa 4 students had an efficiency of 84.83/88.40, which was higher than the specified criterion of 80/80. with statistical significance at the .05 level and 3) the students had the overall satisfaction at the highest level (mean = 4.52, SD = 0.12

Online full paper: **https://bit.ly/424D4CA**

ITE20:NC061

The Development of an Adaptive Learning Game Using the Wordwall Platform to Promote Technological Learning of English Words for Students in Grade 2

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The research aims to 1) develop an adaptive learning game using the Wordwall platform to promote technological learning of English vocabulary. for Mathayomsuksa 2 students 2) to compare the pre- and post-learning achievements on adaptive learning games using the Wordwall platform to promote technological English vocabulary learning. for 2nd and 3rd grade students) studied the acceptance of adaptive learning games using the Wordwall platform to promote technological learning of English vocabulary. For Mathayomsuksa 2 students, the sample used in the research were 30 Mathayomsuksa 2/1 students in the academic year 2022 of Suwan Rangsarit Wittayalai School, obtained by simple random sampling. The research tools were 1) an online game to promote technological learning of English vocabulary, 2) a pre- and post-learn test, and 3) an acceptance assessment form of adaptive learning game development using the Wordwall platform to Promote the learning of English vocabulary in technology. For Mathayomsuksa 2 students, the statistics used in data analysis were mean (Mean), standard deviation (Standard Deviation), difficulty (p), discriminant power (r), confidence value. The results showed that 1) Online games to promote learning English vocabulary by technology. For Mathayomsuksa 2 students, the content consists of 30 words from the basic subjects in Science Technology (Computational Science) Mathayomsuksa 2. 2) Student achievement scores After learning, the score (mean = 8.33, S.D. = 0.98) was higher than the score before (mean = 6.23, S.D. = 0.90) at the statistical significance level of 0.01 and 3) the learners' acceptance level. Knowing by using game development to promote technological English vocabulary learning was at a high level (mean = 4.45, S.D.= 0.52).

Online full paper: **https://bit.ly/3Mw3fwu**

ITE21:NC077

The Develop an Interactive Sign Flipping Game On Computer Equipment for Students in Grade 1

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The purposes of this research were 1) to develop an interactive online game on computer equipment. For students in grade 1 2) Comparison of learning achievements before and after learning by using an interactive online game titled computer equipment 3) To study the level of students' acceptance of interactive online games on computer equipment. In this research, 30 students of Mathayomsuksa 1, Municipal School 2, Wat Phrasongsutthiwitupatham were selected by purposive sampling. The results of the research were as follows: computer equipment For Mathayomsuksa 1 students, divided into 3 sub-units consisting of (1) External Devices (2) Internal Devices (3) Network Devices2) Comparison of learning achievements before and after learning (mean =8.9,S.D.=0.43) higher than the pre-test score (mean =4.36, S.D.=1.34) with statistical significance at the .01 level and 3) the effect of acceptance of learning by interactive label flipping game on computer equipment. For Mathayomsuksa 1 students, the highest level (mean =4.55, S.D.=0.31) showed that Applications can be applied effectively.

Online full paper: **https://bit.ly/3q6HJXw**

ITE22:NC049

Design of Computer-Aided Instruction on Introductory Writing in Python For Students in Grade 2

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The purposes of the research were to 1) Design of computer-assisted instruction on basic Python writing for students in Mathayomsuksa 2 2) Assessment of the design of computer-assisted instruction on elementary python writing. For Mathayomsuksa 2 students, the target group consists of 5 experts in computer-assisted instruction design with at least 5 years of experience, by means of specific selection The research tool was a computer-assisted instruction on introductory writing in Python. For students in Mathayom 2 and the assessment form, the design of computer-assisted instruction on introductory python writing. For Mathayom 2 students, the statistics used in the research were averages. and standard deviation. The research findings showed that the 1) A computer-assisted instruction lesson on basic Python programming for 2nd-year high school students was developed, consisting of a unit on fundamental Python programming concepts. The unit aimed to enable students with no prior programming experience to learn basic Python programming. The unit covered the following topics: 1. Introduction to Basic Python Programming: presenting Python and the importance of learning it, including installing and using the Python interpreter. 2. Variables and Data Types: explaining the use of variables in Python and the types of data that can be used in Python. 3. Program Flow Control: explaining program flow control using programming control structures (loops) and decision making (conditionals). 4. Functions: presenting the creation and use of functions in Python. 5. Error Handling: explaining error handling in Python programming and code maintenance. This unit of instruction used various learning methods such as online teaching, self-learning, group work, and real-world practice. Additionally, there were practice exercises and tests to help students assess their learning.

Online full paper: **https://bit.ly/43kkhEy**

ITE23:NC069

Developing Distancing with Roblox Game Technology About the Covid-19 virus, grade 3

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This research aims to 1) To design and develop the Distancing game with Roblox game technology about the Covid-19 virus at secondary school level 3 3rd place brought to 5 experts to evaluate the results of game development design that helps educate about how to prevent the Covid-19 virus with Roblox games with 1 level. Covid-19 virus, secondary school level 3. The results of the research showed that the Distancing game with Roblox game technology about the Covid-19 virus at the grade level 3 had an overall evaluation at a very good level (mean = 4.39), which was in line with the hypothesis. Therefore, it can be used to educate people about the Covid-19 virus for learners.

Online full paper: **https://bit.ly/43pKjWO**

Development of Computer-Assisted Instruction Emphasis Is Placed on Game-Based Learning Activities with Application Nearpod on The Change of Technology for Students in Grade 1

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The objectives of this research were 1) to develop computer assisted instruction with an emphasis on game-based learning activities. with the Nearpod application on changes in technology. 2) Study the efficiency of CAI lessons by emphasizing game-based learning activities. 3) to compare the pre-learning and post-learning achievements of CAI lessons emphasizing game-based learning activities. With the Nearpod application on changes in technology. 4) Study student satisfaction with the lesson. On the change of technology With the Nearpod application, the sample group consisted of students in grades 1/2. Municipal School 1, Wat Kaen Lek (Rattanakalas Anusorn), 20 students were randomly obtained. Tools used in research 1) Lessons on the change of technology for Mathayomsuksa 1 students. 2)A 30-item multiple-choice learning achievement scale. 3) Student satisfaction assessment form with the Nearpod application. The statistics used to analyze the data were the mean (Mean) standard deviation (Standard Deviation). The results showed that 1) Develop CAI lessons by emphasizing game-based learning activities. With the Nearpod application on changes in technology, students are able to learn well according to the established criteria. With the Nearpod application on the change of technology Secondary 1 students found that The learning efficiency of Mathayomsuksa 1 students had higher achievement after school than before. which considers the Progress from the performance statistics table E1/E2= 81.13/81.83, which is above the 80/80 threshold set. 3)Student achievement scores Studying with computer assisted instruction with an emphasis on game-based learning activities. With the Nearpod application on the change of technology Mathayomsuksa 1 students calculated equal to 16.34, indicating that the mean scores after the test (mean = 24.55, S.D. = 3.35) were higher than the scores before (mean = 17.65, S.D. = 2.45). 4)From research This will see that an overview of the satisfaction with learning activities using CAI with an emphasis on game-based learning activities. With the Nearpod application on the change of technology for students in Grade 1, they are at a good level. This may be because learning this time has games to stimulate the desire to learn. Add fun to the classroom making the classroom not boring at a good level This may be because learning this time has games to stimulate the desire to learn. Add fun to the classroom Make the classroom not boring at a good level (mean = 3.80, S.D. = 0.06).

Online full paper: **https://bit.ly/3MzqAgE**

ITE25:NC080

Online Computer Assisted Instruction on Use of Basic Scratch Programs for Grade 4 Students

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The research objectives were 1) to develop computer-assisted instruction on the use of basic Scratch programs together with the Google site for grade 4 students, 2) to compare the learning achievements in using computer-assisted instruction on the use of basic Scratch programs integrating with the Google site for grade 4 students, 3) to evaluate the satisfaction of students towards the computer-assisted instruction on the use of basic Scratch programs. The sample group was the 13 grade 4 students at Municipal School 2, Wat Thamromg (Phanphadoong), Banlat District, Phetchaburi Province registered in the second semester of the academic year 2022. The research tool consists of computer-assisted instruction on the use of basic scratch programs, along with the Google site, an achievement test, and the satisfaction questionnaire. Statistics used were mean, standard deviation (S.D.), and dependent samples T-Test. The results showed that the suitable evaluation test from an expert in developed computer-assisted instruction was at the highest level (Mean= 4.76, S.D. =0.45), the comparison of learning achievements using the T-Test Dependent which has a t* value of 32.30, was seen that the learning achievement of after learning was higher than before learning at the significant of .05. The efficiency of use of computer-assisted instruction was 88.25/90.16 according to the performance criterion of 80/80, and the student's satisfaction with computer-assisted instruction on the use of the basic Scratch program was at the highest level (Mean= 4.84, S.D. = 0.41), which the results of the research can be used as guidelines for further development.

Online full paper: **https://bit.ly/45uJ3Ua**

ITE26:NC037

The Development of Analytical Thinking Skills through 5E Inquiry-Based Learning Activities Combined with the Use of Quizizz teaching media on Threats from Information Technology of Matthayomsuksa 1 Students

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The purposes of this research were 1) to develop the efficiency of analytical thinking skills by organizing inquiry-based learning activities together with Quizizz teaching media of Matthayomsuksa 1 students, 2) to compare learning achievements before and after learning management by using Quizizz teaching media for Matthayomsuksa 1 students, and 3) to assess the student's satisfaction with the CAI lesson on the threats from the safe use of information technology by using Quizizz for Matthayomsuksa 1 students. The target group consisted of 22 students in Matthayomsuksa 1 by purposive sampling method. The tools used in the research was Quizizz. The results of the research were as follows: 1) The results of developing the efficiency of analytical thinking skills by organizing knowledge-seeking learning activities using Quizizz of Matthayomsuksa 1 students were found that the score during learning (E1) was 87.27 and the score after learning (E2) was 64.32, which was effective according to the established criteria 80/80. 2) The comparison of scores before and after learning on Threats from the use of information technology by using Quizizz of Matthayomsuksa 1 students were 44.17 before learning, and it was found that after learning the score was 55.83, which was higher than before learning. And 3) the results of satisfaction assessment of Matthayomsuksa 1 students on Threats from information technology using Quizizz with 22 students, the overall were at the highest level (Avg = 4 .81 , SD = 0.47).

Online full paper: **https://bit.ly/43iBxut**

ITE27:NC067

The Game-Based Learning Approach is Used to Enhance Learning of Basic English With The Ztype Game in Secondary 3

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The objective of this research is to 1) find the effectiveness of learning using the Ztype game as a basis, 2) compare the learning outcomes before and after using the game-based learning approach in Basic English for Grade 10 students, and 3) evaluate the satisfaction of the students towards the game-based learning approach in Basic English for Grade 10 students. The research was conducted with a sample group of 20 Grade 10 students from Benchamatheputhit phetchaburi school, in the academic year 2023. The research used a purposive sampling method. The results of the research showed that the effectiveness of learning using the game-based learning approach was E1/E2 = 80.75/84.00, which was higher than the set criteria of 80/80. The pre- and post-test scores of the students using the game-based learning approach in Basic English for Grade 10 students showed a statistically significant difference at the .05 level, with a score of 20.19. Moreover, the students' satisfaction towards the game-based learning approach in Basic English for Grade 10 students was at the highest level (mean = 4.66, S.D. = 0.16).

Online full paper: **https://bit.ly/430vvhG**

ITE28:NC063

The Development of Online Games to Promote Learning on the use of the Internet Computational Science Course for Students in Grade 4

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The objectives of this research were 1) to develop an online game to promote learning on Internet usage. computational science course for Prathomsuksa 4 students. computational science course For students in grade 4 Research tools 1) Online games to promote learning about the use of the Internet. computational science course for Prathomsuksa 4 students. For students in grade 4 The research findings were as follows: 1) The development of online games to promote learning on the use of the Internet. computational science course For grade 4 students, the researcher has an online game that will be used to promote student learning. because it matches the objectives of the research because there is an insertion of the content of the course Along with attracting the attention of students with a game that must answer the questions correctly. to defeat the enemy 2) Assessment of the quality of online games to promote learning on Internet usage. computational science course For Prathomsuksa 4 students, after taking online games to 5 experts for evaluation, it was found that online games promote learning on Internet usage. computational science course For students in grade 4 The overall assessment results are at a very good level (mean = 4.69), which is in accordance with the assumptions set. can be used to manage teaching and learning with computational science courses of grade 4 students The authors use statistics from question-to-objective (IOC) estimation. Therefore bringing the game developed to experts to evaluate and to measure the consistency between the questions and the computational science subjects.

Online full paper: **https://bit.ly/428zFCW**

ITE29:NC064

Development of Didactic Games Using The Gamilab Platform Course on Design and Technology on Changes in Technology Secondary 1

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The objectives of this research were 1) to develop a teaching game using the Gamilab platform on the subject of changes in technology. Mathayomsuksa 1 2) to find the quality of teaching games created using the Gamilab Platform on Transforming Technology Secondary 1, The target group consisted of 5 experts by specific selection method. The tools used consisted of: 1) Didactic games created using the Gamilab platform on the subject of changes in technology. Mathayomsuksa 1 2) Evaluation form for the quality of teaching games Created using the Gamilab Platform of Transformation Technology. Mathayomsuksa 1 in analyzing statistical data used were Mean and Standard Deviation. The results of the research were as follows: 1) The development of teaching games using the Gamilab platform on the subject of changes in technology. Secondary 1 has various components such as the main page of the game, the start page of the game, the question box page, the question page, the finish line page, the result page at the end of the game. 2) The results of assessing the quality of didactic games created using the Gamilab platform on technology changes. Mathayomsuksa 1, which found that the overall assessment of the quality of didactic games was at a high level (mean = 4.62, S.D. =0.15).

Online full paper: **https://bit.ly/424lnDh**

ITE30:NC089

Student Information Program for The Child Development Center of Kuan Wan Subdistrict Municipality

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The purposes to create "The program to record the Student Information for the Child Development Center of Kuan Wan Sub-district Municipality" were 1) To Create the program to record the Student Information for the Child Development Center of Kuan Wan Sub-district Municipality. 2) To study the satisfaction of users of the program to record the Student Information for the Child Development Center of Kuan Wan Sub-district Municipality from The sample consisted of 20 teachers in the Child Development Center of Kuan Wan Sub-district Municipality. The results found out that. The results of the study showed that there was a program that could collect personal records of students in the Child Development Center, Kuanwan Subdistrict Municipality. The level of satisfaction towards the curriculum vitae program of students in the Child Development Center, Kuanwan Subdistrict Municipality The overall picture is at a high level. The mean was 4.46 when considering each item. It was found that the number one was the satisfaction in the completeness of the collected data. at a high level the mean was 4.49, followed by the satisfaction with the Program at a high level 4.44, and the satisfaction with the Design at a high level 4.44.

Online full paper: **https://bit.ly/3MR4RSU**

ITE31:NC088

Obstructed Parking Notifier Devices via LINE Application for the Vehicles of Disabled Person

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Purposes of this research are: To create and to define efficiency of Obstructed Parking Notifier Devices via LINE Application for the Vehicles of Disabled Person. Which is designed to be synergistic between Ultrasonic Sensors and Node MCU ESP32-Cam. When obstructed parking in range detected it will make some noise and take the photo of the obstructer then notify via LINE. Which may solve some problems of the wheelchair disabled person who still can drive car by themselves and faced problems in getting in and out the car, just because there was a car parked too close. From the efficiency defined experiments, we found that: when the obstructer detected in 0 – 100 cm range to the device, Node MCU ESP32-Cam will capture and sent the photo to LINE Account that been set in the controlling program. Consequently, sounds some notify noise and turn on the notice LED reminding in every time it detected. This will alarm both obstructer car and the car owner. So, we can say that Obstructed Parking Notifier Devices via LINE Application for the Vehicles of Disabled Person has efficiency as defined.

Online full paper: **https://bit.ly/3WuyHzA**

Electrical Engineering and Education

สาขาวิศวกรรมไฟฟ้าและการศึกษา

NCTechED15 **EEE01-EEE13**

EEE01:NC027

Energy Management Air Compressor by Building Automation to Increase Cost Reduction Potential Power Consumption

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At present, digital platforms are being used to change the process or management mode. Create new processes suitable for the changing digital era by viewing information online. Just like energy conservation, energy data is collected through a digital platform to ensure accuracy and true display. Time can be used to compare the energy consumption of each time period, check the efficiency of the refrigerator, and determine the energy efficiency of the air compressor. And reduce the unloading time of one machine using the compressed air system each time. The unloading time of the main machine has been adjusted to more than 80%. In the research, after adjusting to unload time, the savings were 57,637.56 baht, with a payback within 1.2 years.

Online full paper: **https://bit.ly/3ovDuVa**

EEE02:NC026

Logic Gate Demonstration Kit Development For vocational certificate students of Phichit Technical College

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The purpose of this research was to develop a logic gate demonstration set to determine its efficiency and find learning achievements in the set. The tools used in the research consisted of a demonstration set of logic gates with 10 experimental worksheets and an academic achievement test for the second-year diploma students in the Department of Electrical Engineering at Phichit Technical College, and the sample group used in the research were students in the second-year diploma level of the Department of Electrical Engineering at Phichit Technical College; 17 people The sample group will be tested before and after class with the experimental test of the logic gate demonstration set. Comparison of learning achievement by t-test analyze the data to determine the efficiency of the demonstration set with E1/E2 values and find the student's satisfaction with the use of the logic gate demonstration set. The results showed that the built-in logic gate demonstration set had an efficiency of 80.14/85.14 with a t-test of 10.83. The learners who studied with the created logic gate demonstration set had significantly higher learning achievement at the .05 level, and the learners' satisfaction with the logic gate demonstration set was at a high level.

Online full paper: **https://bit.ly/434Z4yC**

EEE03:NC054

Development on Practical Teaching Set for Computer based Electrical Drawing with Shop Drawing 3D for Diploma Certificate Students

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The purpose of this research is to develop learning and teaching methods, specifically in developing a set of teaching materials for the practical course in computer-aided electrical drawing, focusing on 3D shop drawing for vocational diploma certificate students. The tools used include: 1) creating a prototype set by designing the lighting and electrical system and finding the 3D shop drawing, 2) shop drawing work templates for lighting and electrical systems, and 3) a user satisfaction survey conducted with a sample group of 15 first-year students from the Electrical Power Department of Phichit Technical College, who were divided into a control group and an experimental group. The research findings revealed that the students who were taught using the prototype set and a searching-based teaching method achieved a higher learning effectiveness rate of 84.6/88.2 than the set standard of 80/80 when compared to the control group, and the t-test results showed a significant difference of 0.5. The experimental group's average score (mean = 25.53) was higher than the control group's average score (mean = 20.66), indicating that the development of the teaching materials for electrical drawing in 3D shop drawing for vocational diploma certificate students resulted in better learning outcomes than traditional teaching methods. Additionally, the students showed high levels of satisfaction in their learning experiences with this teaching method. The principles of electrical drafting in 3D shop drawing are also discussed in this research.

Online full paper: **https://bit.ly/3BS4CR9**

EEE04:NC048

LT. Switch Replacement Cable Set That Without Cutting the Power Distribution System

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This research has the following objectives: 1) to design and construct the LT. Switch replacement cable Set that without cutting the power distribution system, 2) to determine the efficiency of LT. Switch replacement cable Set that without cutting the power distribution system, and 3) to study opinions of the researchers. People who use the LT. Switch replacement cable set without cutting the power distribution system. The samples used in the experiment of the LT. Switch were employees of the Provincial Electricity Authority by purposive selection method, 10 people. Data analysis and statistics used were percentage, mean and standard deviation. The research findings were as follows: 1) Design and construction of the LT. Switch changeover cable set without cutting off the power transmission system. can be a connecting cable instead of the main cable while working and can change the LT. Switch normally and display the amount of current on the screen to check the condition of the system. 2) Efficiency result found that from 10 trials, the LT. Switch can be changed all 10 times without any problem. Representing 100 percent and the results showing the electricity value on the screen all 10 times, representing 100% and taking the time to change the LT. Switch for maintenance of the electrical system on average 35 minutes and 3) the evaluation of opinions on the LT. Switch replacement cable set found that most of the samples agree Overall, all aspects had an average of 4.71, which was in the highest level. In terms of use, there was an average of 4.93, in the highest level. First, followed by utilization and value with an average of 4.75, in the highest level. And in terms of style and structure, the mean was 4.56, which was the highest level, respectively.

Online full paper: **https://bit.ly/420ExtL**

EEE05:NC002

The Study of Learning Achievement to Develop Mathematical Skills by Using The Buddy Technique Combined with Small Group Activities Through Outcomes Oriented Learning (OBEM) Submodules

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This research has 1) to develop a learning management model with mathematical calculation skills by using the buddy technique combined with small group activities through Outcomes Oriented Learning submodules 2) to study learning achievement of the mathematical skills by using the buddy technique combined with small group activities through Outcomes Oriented Learning submodules.3) to study the satisfaction of teachers on developing mathematical calculation skills after learning by using the buddy technique combined with small group activities through Outcomes Oriented Learning submodules. The sample group used in this research was 80 students from electrical technology education students, semester 1, academic year 2022, Faculty of Industrial Education and Technology, King Mongkut's University of Technology Thonburi were selected by purposive sampling. The research tools consisted of 1) Mathematics Learning Management Plan on Calculus by using the buddy technique combined with small group activities through Outcomes Oriented Learning submodules 2) the learning achievement test to develop the mathematical calculation skills by using the buddy technique combined with small group activities through Outcomes Oriented Learning submodules by using a single-group research study plan 3) a study of instructor satisfaction with learning in mathematics (calculus) subjects by the buddy technique combined with small group activities through Outcomes Oriented Learning submodules. Statistics for data analysis were mean, standard deviation, and t-test. The result was as follows: 1) the ability to calculate mathematics by using the buddy technique combined with small group activities through Outcomes Oriented Learning submodules have a passing score of not less than 70 percent of the standard criterion. 2) Achievement mathematical calculation skills after class with learning management by using the buddy technique combined with small group activities through Outcomes Oriented Learning submodules use a single-group research study pattern only measured after the experiment at statistical significance at the .01 level. 3) The satisfaction with learning in mathematics (calculus) subjects by using the buddy technique and small group activities through results-oriented learning submodules. The total average of teaching and learning management average of 92.5 percent higher than the threshold of 70 percent is considered consistent with the assumptions set.

Online full paper: **https://bit.ly/3OAdLp2**

EEE06:NC104

Development of Learning Media Package of Smart Home Control System Through Internet of Things

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This paper presents the development of learning media package for smart home control systems with Internet of Things technology. The educational media package can apply to teaching and training for those who are interested in learning about the Internet of Things (IoT). Learning media can help encourage learners to develop self-learning skills and apply knowledge to work. The smart home control system consists of a control circuit using an ESP321 microcontroller board, a servo motor control circuit for opening-closing doors, a motion detection circuit with ultrasonic sensors, a gas detection circuit, and a temperature measurement circuit. The control system has control and data display through the Blynk application on a smartphone that can display temperature, humidity, gas content, and movement. The system can control lighting, fans, and automatic doors. In case of system problems, the system will send a message notification through the mobile application of Line. The test results of the learning media package and the smart home control system can work within the specified scope and can be used in teaching or training interested people effectively.

Online full paper: **https://bit.ly/3q6Gnfo**

Peer-assisted Learning with Team-games Tournament Strategies Applied for Diploma in Electrical Circuits 1 Course Class Management

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This research proposes the results of teaching using a peer-assisted learning and team competition teaching model, which includes content such as electric circuit, parallel circuit, mixed circuit, the theory of Thevenin, and the theory of Norton. The process involves selecting students who are enrolled in the electric circuit course in the second semester of the academic year 2565 (Diploma Certificate level 1/6). The students are divided into groups of 4-5 students each, based on their academic performance in the previous semester and pre-tests. Each group consists of members who are strong, weak, and average. In the teaching process, the teacher assigns a problem for each group to solve together. Each member in the group is involved in every step of the process, and those who are not participating in any part must help teach and guide other members to solve problems and answer questions about the circuit. There is a competition between groups with scores being recorded to determine the winner at the end of the teaching period. The results of the experiment show that the peer-assisted learning and team competition teaching model is effective and can be used for teaching, as seen from the learning outcomes and satisfaction of the students towards the teaching model. The research results can be summarized as follows students are taught, Peer-assisted Learning with Team-games Tournament Strategies Applied for Diploma in Electrical Circuits 1 Course Class Management have an achievement before class score average = 5.01 and the standard deviation (S.D.) = 0.99 and achievement after class score average = 6.40 and the standard deviation (S.D.) = 1.27 The results of hypothesis testing by t-test revealed that learning achievement students are taught, Peer-assisted Learning with Team-games Tournament Strategies Applied for Diploma in Electrical Circuits 1 Course Class Management. After learning was higher than before learning with statistical significance at the level .05

Online full paper: **https://bit.ly/3IDwMTF**

EEE08:NC040

Development of a Skill Training for Wiring Light Bulb Circuits with Outcome Based Education (OBE) for Junior High School Students

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The objectives of this research were to develop a set of skills training for wiring light bulbs circuits and to improve learning outcomes in the subject of electrical wiring in buildings for a Sample of 22 third-year high school students who chose to study additional courses in electrical wiring. The case study was conducted at Ao-Luk Prachasan School. The research tools used included wiring light bulb circuits training kit, worksheets for wiring light bulb circuits and a light testing system. The Outcome-Based Education (OBE) approach was used in the study. The results showed that a set of skills training for wiring light bulb circuits could be created and used in a learning management system that followed the OBE approach, which resulted in four learning modules: 1) learning about the types of light bulbs, 2) learning about how to wire fluorescent bulbs with twisted wires, 3) learning about how to wire fluorescent bulbs with electronic ballasts, and 4) learning about how to wire LED bulbs. When used in teaching, students had an average performance score of 8.94 out of 10 (89.52%) as followed ; the average of worksheet 1 is 7.57, the average of worksheet 2 is 9.28 and the average of worksheet 3 is 10 .The improvement in learning outcomes, with an average score increase of 3.91 points (39.09%) from pre-test to post-test.

Online full paper: **https://bit.ly/43px3l4**

EEE09:NC025

STEAM Education Learning Management with Project-Based Learning Management of Lighting Circuit with Application for The Learning Area for High School Students

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The purpose of this research was to study student achievement, to compare the pre-and post-test achievement of students, and to assess the satisfaction of students who learn with STEAM education learning management with Project-Based Learning management. About the lighting circuit and its applications for occupations, career high school. The sample consisted of 16 Mathayomsuksa 4 students of Sak Lek Wittaya School Phichit Province in the second semester of the academic year 2022 obtained by purposive sampling. The research tools are Lesson plans on lighting circuits and their applications by organizing 20 periods of learning activities, learning activity certificates, learning management quality assessment form which consists of tests before and after class work piece appraisal form, behavior assessment, and student satisfaction assessment form. The sample group will be tested first to compare the scores of the post-learning scores from the learning activity sheet. From the research results, it was found that the mean of the student's academic achievement was higher than the specified criteria at the level of 80.11 percent. The average score after learning (full score of 10, Average =7.38, S.D. =0.50) was higher than before (full score of 10, Average = 2.13, S.D. =0.72) with a statistical significance of 0.05 and student satisfaction was at the highest level (full score of 5, Average =4.54, S.D. =0.86).

Online full paper: **https://bit.ly/3WyvwY0**

EEE10:NC038

Development of Instructional Package on Self-Holding Circuit in Control Motor Single Phase for Vocational Certificate Student Using Experiential Learning

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The objective of this research is development of teaching packages by using a self-control circuit and motor control kit for a single-phase electric motor at the vocational certificate level. The tools used include: 1) a learning experience-based self-control circuit and motor control kit, 2) a test form for the self-control circuit and motor control kit, and 3) a satisfaction survey for the experimental group. The sample group consists of 15 third-year vocational certificate students in the electrical engineering department at Phichit Technical College, divided into an experimental group and a control group. Data analysis is conducted using the mean, standard deviation (S.D.), and t-test. The results show that the learning kit is more effective for the experimental group than the control group. The experimental group achieved a higher average score than the control group, and the students were satisfied with the learning kit. The self-control circuit and motor control kit can be used to develop knowledge and skills for the learners.

Online full paper: **https://bit.ly/43ibSRY**

EEE11:NC029

The Developing an Experimental Set and Finding Efficiency to Control the Lighting System for Vocational Certificate Students

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This research aims to develop and determine the experimental kit's efficiency for controlling lighting systems using Arduino as a teaching aid. The target group for this research project is 20 third-year vocational certificate students in Electrical Power Department at Mae Nam Kwai Industrial and Community Education College. The tools used in this research project include 1) an experimental kit for controlling lighting systems with Arduino, and 2) a test form for measuring learning outcomes using t-test and data analysis to determine the efficiency of the experimental kit with E1/E2 value. The research found that the experimental kit is efficient at the level of 86.50/88.91 and the learning outcomes of students who used the kit were significantly better than those who did not, with an average learning outcome of 53.35 compared to 23.90 and 4) students satisfaction of the experimental kit for controlling lighting systems using Arduino is the highest of all. before the experiment. Therefore, this experimental kit can be used as a teaching aid to enhance students' knowledge, understanding, and application skills with greater efficiency.

Online full paper: **https://bit.ly/3Wxq3jX**

EEE12:NC034

Construction and Finding Efficiency on Experimental Set of Measuring Instrument and Electric Circuit

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The objective of this research study was to develop and evaluate the effectiveness of a set of experimental electrical measurement and circuit tools. The study investigated the learning outcomes of the participants and surveyed their satisfaction levels with the learning process. The study sample consisted of 20 first-year vocational certificate students in the electrical engineering department at Mae Nam Kwai Vocational College, who were randomly selected using purposive sampling. Two sets of experimental electrical measurement and circuit tools were used in the study, and pre- and post-tests were administered before and after the learning process. Data analysis was conducted by calculating means, percentages, standard deviations, and the E1/E2 efficiency ratio. The research findings showed that the experimental electrical measurement and circuit tools had a higher efficiency ratio than the prescribed benchmark of 82.50/84.16 indicating that the developed toolset was effective for teaching purposes.

Online full paper: **https://bit.ly/3Mz6oLS**

EEE13:NC065

Development of Analysis Efficiency and Performance Induction Motor for Fieldwork

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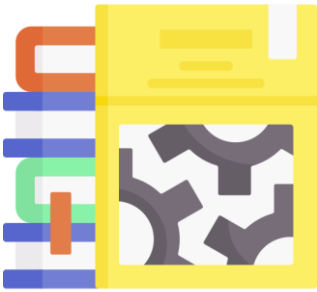
This paper presents a Design and Development of Simulation Efficiency and Performance Induction Motor for Fieldwork, which simulates the behaviour of electric motors that change according to the increasing load conditions. By using the MATLAB program to help with the simulation and creating a GUI as function interface. The program contains a section on theoretical topics related to electric motors. And the theory has also been applied to work in the field. The research result when assigning the sample to be students of the Department of teacher Training in Electrical Engineering, Faculty of Technical Education, 11 people. Found that the efficiency of the program was 1.31 according to Meguigans standard, The learning achievement after learning was higher than before learning at the significance level of .05, and also assessing user satisfaction with the highest level of satisfaction. From the developed program, it can be used for teaching or as a guideline for developing a program for teaching and learning in other subjects.

Online full paper: **https://bit.ly/3BTsWSQ**



Engineering and Technical Education

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NCTechED15 **ETE01-ETE12**

ETE01:NC035

Direct Feed Ultra Pure Reverse Osmosis with Electro Deionization Dialysis Water Machine System for Hemodialysis

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Hemodialysis is an important method of renal replacement therapy in the treatment of patients with end-stage chronic kidney disease. make it safe nowadays But there are still risks that may occur at various stages. which may cause negative effects on the patient until it is life-threatening Preparation of purified water for hemodialysis is safe and effective. It is a very important factor. to ensure that the water quality meets international standards Reduce the incidence of chemical and endotoxin harm because each dialysis session requires a large amount of water and water can penetrate into the patient's blood stream. The water used must be purified according to standards and comply with guidelines for the preparation of pure water for use in hemodialysis machines. Therefore, the design and construction of a pure water generator is of utmost importance. The design and construction of a water purification machine must be of high quality water quality. Has a high purity of water has the lowest electrical inductance must not be contaminated with microorganisms and endotoxins, as well as must save energy in terms of electricity and less raw water consumption It also requires lower maintenance costs. In this research, the researcher designed and built a high-purity water generator. By bringing pure water production technology with Reverse Osmosis (RO) and Electro De-Ionization (EDI) systems used together and designed to create a direct supply type. From the test results of the HYPERNOVA - 36K high-purity water machine, which is a machine that has been designed, built and used in a hemodialysis clinic. Results from water quality tests from the machine and from various laboratories have resulted in the quality of pure water obtained from this machine compared to the existing machine. The new machine can produce water with higher purity. It can be measured due to its lower electrical conductivity, which measures < 1 μS/cm, and also uses a lower amount of raw water. Including using less electricity and saving more Because the power equipment used is smaller and has less power consumption than the original equipment. As a result, this machine has a higher rate of energy saving, water and electricity as well as higher efficiency. In addition, in terms of the quality of the pure water, the chemical content was below the specified criteria in every item. Microorganisms at all sites were detectable 0 CFU/mL and Endotoxin at all sites were < 0.001 EU/mL.

Online full paper: **https://bit.ly/3BQIh6n**

ETE02:NC085

Building and Finding Efficiency of Heated multi-purpose Roaster

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The purposes of this project were to 1) design and build the machine, 2) find the efficiency of the machine, and 3) study the satisfaction of users using a multi-purpose heater using a heated roaster. The research process consists of Machine design and build Test the efficiency of the machine. find out the satisfaction of users using the machine. Statistical data were analyzed using mean values. standard deviation the tools used in this research were a multi-purpose roaster using a heater. data record form machine trial and a satisfaction assessment form for the user using the machine the results of the research project found that Machine design and construction results the machine has dimensions of width x length x height equal to 45 x 70 x 103 centimeters. The components of the machine have 2 sets, namely part 1, roasting set, so that it can conduct heat well. And does not rust, so choose to use stainless steel materials The roaster set consists of 1. Container 2. Roaster, under which there is a 2,000 watt heater as a heat source. Inside there is an axle with 11 roasted leaves attached to the motor, which transmits power to cause rotation. 3. The outlet pipe is made of stainless steel pipe. Diameter 3 inches, thickness 1.2 millimeters, bent at an angle of 45 degrees, length 30 centimeters, connected to a closed valve - allowing chili and peanut seeds to flow out of the roasting unit to the supporting tray. The 2nd part of the support cabinet is made of stainless steel. In the cabinet there is a support tray, 1.2 mm thick, folded into a square shape. The result of finding the performance of the machine found that the roasting of 1 kg of dried chillies of Chinda was found that the optimum temperature and time for roasting were 120 oC for 20 minutes, resulting in dark red color of dried chillies, with a pungent odor, without burnt chilli, weighing 0.99 kg and roasting 1 kg of khon kaen 60-1 peanut kernels. The experimental results showed that the most suitable temperature and time for roasting was 150 oC 40 minutes, which resulted in complete ripening of the peanut kernels. The peel is brown. The inner seeds are golden yellow, weighing 0.99 kg. The result of satisfaction opinions of 15 testers come from teachers in the department of machine, welders, and machine makers. People in Nongkhai Province found that the most satisfied aspect was the productivity aspect with a high level of satisfaction (mean= 4.44, S.D. = 0.6) Followed by usability. Satisfaction was at a high level (mean = 4.42, S.D. = 0.58) and design and construction Satisfaction was at a high level (mean = 4.26, S.D. = 0.67) Considering the overall of the machine There was a high level of satisfaction (mean = 4.37, S.D. = 0.62).

Online full paper: **https://bit.ly/3IF3R1z**

ETE03:NC079

Design and Development of Remote Control for use with TOYOTA Model 1NZ

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Currently, Remote Control of the car that the manufacturer has installed together. It can facilitate comfort to the driver but there are some cars that are not equipped with the Remote Control. Car owners can bring their cars to a service center or a place where they can be installed as well. From that origin. The researcher is interested in the design and development of Remote Control for used with TOYOTA Model 1NZ vehicles. The objectives are to 1) Design and development of the Remote Control for use with TOYOTA Model 1NZ. 2) Evaluate the quality of use and find the efficiency of remote control operation distance. The results showed that the remote control transmits a radio signal depending on the button pressed to the car receiver. It is able to cut off engine start, ignition coil circuit and engine injector circuit. The 18 experts from automobile establishments (establishments in Loei Province). The design quality assessment result was mean =4.94 , S.D.=0.12 The evaluation result for usability was mean =4.94 , S.D.=0.16 Overall, the average was 4.94, which translated to a very good level. It has a commanding efficiency of 5-10 meters. The obstacles do not affect the operation of the remote control. It can be a prototype to install with other car models.

Online full paper: **https://bit.ly/434KbMX**

ETE04:NC081

The Truck Wheel Bearing Grease Compressor with Pneumatic System

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Research on The Truck Wheel Bearing Grease Compressor with Pneumatic System are (1) to design truck wheel bearing grease Compressor with pneumatic system (2) to study the efficiency of a wheel bearing grease Compressor with pneumatic system and (3) to assess the quality of truck wheel bearing grease Compressor with pneumatic system. Research methodology are study design and construction of a truck wheel bearing grease Compressor with pneumatic system Test and improve it. The research tool was a questionnaire data record form The statistics used in the research were mean and standard deviation. The results as follows 1) Design and construction of truck wheel bearing grease Compressor with pneumatic system. It is a steel structure with dimensions of width × length × height equal to 60 × 60 × 120 centimeters. The main components consist of a supporting base. Grease canister and stand, upper cone, lower cone, 2-way pneumatic cylinder, pressure gauge and regulator. Operating valve, air hose and grease retracting spring can fill grease with a maximum diameter of 9.5 centimeters, a maximum pressure of 85 PSI. 2) The efficiency of the grease compressor from the experiment of lubricating the grease of truck wheel bearings Compressor using a pneumatic system for 5 times, the average grease filling time was 22.22 seconds per 1 bearing and the average grease filling time was 27 seconds per 3 bearings. 3)Truck Wheel Bearing Grease with Pneumatic System Created Overview of 3 aspects of design Welding and usability The mean was at the highest level (mean= 4.80, S.D. = 0.14).

Online full paper: **https://bit.ly/45uxuww**

ETE05:NC086

Create And Study Aluminum Castings with Brass Moulds

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Institute of Vocational Education Northeastern : Region 1

Project Study on the Study of aluminum casting with brass mold there is a project objective to design and create aluminium casting molds with brass molds to find the aluminum casting performance with brass mold and to find the quality of aluminum casting with brass mold. The students have studied related information and theories as follows. design ideas selection of mold materials shaking characteristics of printing and casting. Aluminum alloy die casting and melting point, etc., and the student has a method of conducting the research organizer invited 5experts to evaluate the efficiency of aluminum casting with brass mold. To collect information let's do the analysis to find the performance of aluminum casting with brass molds, 3 aspects are the design. The construction of aluminum casting molds with brass molds. And aspects of use and tested for the quality of aluminum castings with brass molds.Evaluation results for aluminum die casting with brass mold found that the overall efficiency was at a highest level The mean value was 4.51 When considering each aspect, it was found that the most efficient side was design the mean of 4.63 was at the highest level. And in terms of use, the mean of 4.51 was at the highest level. And the least effective aspect is In the construction of aluminum die-casting molds the mean of 4.40 was at a high level. Tests for the quality of aluminum casting parts with brass mold 5 times, 10 pieces each time, total 50 pieces from the set criteria is at least 40 pieces must be obtained from the casting test. 45 completely complete work pieces are considered to meet the standard criteria.

Online full paper: **https://bit.ly/3IDSPtk**

ETE06:NC095

Interlockinging Blocks From Laterite Case Study : Bannammog Nammog Subdistrict Thabo District Nongkhai Province

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The objective of this research were to: 1) To study the problems and professional development needs of the people Bannammog Nammogsubdistrict Thabo district Nongkhaiprovince. 2) For develop the untimate compressive strength of interlocking bricks from Maerang Bannammog Nammogsubdistrict Thabodistrict Nong khaiprovince. .The Research operations are research and quantitative development use qualitative questionnaires and group discussion methods ,deep interview and non-participatory observation. For to brainstorming ideas on the development of interlocking bricks from mae rang. The test compressive strength, sand mix and specific gravity of the sand. The results of the study found : The population need to develop a career in producing interlocking bricks from Maerang. The results of combining interlocking bricks from Mae Rang mixed with rice husk ash and cement were compacted into 12 × 25 × 10 cm. blocks. The ratio of 0.5:1:6 (Cement and rice husk ash: sand : mother's nest) tested at 14 days of age. Able to receive the maximum crushing strength equal to 73.72 kg persquarecentimeter. By passed the standard of the general brick block 602/2547 can be used in construction work. The Evaluation results of using interlocking bricks from Mae Rang for construction work found : The People were satisfied with using interlocking bricks from Maerang at 56.67 percent. It generates income for the family and relevant agencies, both government and private sectors, accept the production of interlocking bricks from Maerang. And the evaluation results from satisfaction in design, beauty and usability of interlocking bricks from Maerang found that the mean was 4.45 at a high level.

Online full paper: **https://bit.ly/45roAzP**

ETE07:NC087

Build and Study Bee Hijack Preparation Eqequipment

Naokham Sayyaseng, Panya Wangsaphan, Pornchai Yambarn, Monthian Ponsrilap, Wichian Suwannaphon

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Institute of Vocational Education Northeast : Region 1

A project study on the creation and study of wax sheet preparation equipment. The objective of the project is to create and study the preparation of wax sheet. To determine the efficiency of the wax preparation equipment and to reduce the time of the wax preparation process. The organizing committee has studied the information and related theories as follows. design concept Selection of materials for making wax plate preparation equipment device creation Characteristics of pouring wax water, etc., and the study methodology the researcher invited 5 experts to evaluate the efficiency of wax sheet preparation. to collect information Let's analyze to determine the efficiency of wax sheet preparation in 3 aspects, namely the design aspect. The creation of wax preparation equipment and usage and have tested the quality of the wax sheet preparation equipment Research results for the efficiency of wax sheet preparation equipment the experts can summarize the results as follows. Assessment average by experts in all 3 areas. The overall mean was 4.72 standard deviation 0.15. When considering the side, it was found that in terms of use, the mean was 4.62 standard deviation was the most 0.23, followed by design with mean is 4.73 standard deviation 0.27, and the construction of wax plate preparation equipment. Their mean values were 4.80 standard deviations of 0.00 respectively. Quality testing of the wax strip preparation equipment with stainless steel 5 times, 10 pieces each time, total of 50 pieces. From the specimen testing of the wax plate preparation device, all 42 pieces of good, complete and complete specimens were obtained. Broken, not full or incomplete, all 8 pieces From the set criteria are Must obtain at least 40 specimens from the test. All 42 complete specimens can be deemed to meet the specified criteria.

Online full paper: **https://bit.ly/3ODlfYC**

ETE08:NC103

Testing Electrical Characterization of Lithium-ion Batteries

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This article presents a testing electrical characterization of Lithium-ion batteries and electrical property investigation. This research will follow the IEC 61960-3 standard in which Lithium-ion batteries are provided. In addition, this research can confirm that the Lithium-ion batteries passed this test can store and supply the energy following the manufacturing companies. The testing results according to the IEC 61960-3 standard showed that the tested batteries, Lithium Nickel Manganese Coble Oxide (NMC), Lithium-Ion Phosphate (LFP) and Lithium Polymer (LPO), can provide the expected characteristics in terms of both electrical voltage and current from the companies.

Online full paper: **https://bit.ly/434IcrK**

ETE09:NC094

Induction Motor Simulator

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Induction Motor relies heavily to the production process in industrial plants. The stator winding coil generates a magnetic field when energy is supplied to it, and this is how an induction motor operates. Due to the variation in the current flowing during each phase, this magnetic field revolves around the stator. This magnetic field's motion will intersect with the rotor's coil or conductor, inducing an electric current that can be employed to produce mechanical energy. It could be challenging for learners or students to understand the Induction Motors' operating concept from words and photographs alone without a simulator. In order to create a teaching tool that can mimic the functioning of induction motors for a clearer dimension, it was decided to design a set of simulations for induction motor operation according to the research process. The results of user satisfaction assessment for improvement on Induction motor operating simulator (Model), which consists of students at Loei Technical College; Average opinion in terms of structure; the highest score is the size suitable for using (mean = 4.85, S.D. = 0.55), followed by the strength (mean = 4.8, S.D. = 0.52) and finally, using the suitable material (mean = 4.75, S.D. = 0.55). The total score in terms of structure is in the criteria of very good. Average opinion in terms of usability; the highest score is uncomplicated using (mean = 5, S.D. = 0), followed by being suitable for the workload (mean = 4.95, S.D. = 0.22), being a high-quality workpiece (mean = 4.85, S.D. = 0.48) and finally, the safety (mean = 4.8, S.D. = 0.52). The overall score for usability is very good. Average opinion in terms of development; the highest score is being able to improve (Develop) (mean = 4.15, S.D. = 0.58). The overall score for development is good. Thus, the results of data analysis with the sample group shows that the performance of the induction motor model set E1/E2 is equal to 80/95.5, indicating that Induction motor operating simulator (Model) has an efficiency of 80/80 as set.

Online full paper: **https://bit.ly/4345ez1**

Design of Floating Solar Energy for Water Pump

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This paper presents the design of a floating buoy equipped with a solar pumping system. The purpose is to design a floating buoy for installing a DC voltage water pump system that pumps water using 12 VDC from a battery power source charged from a 50 W solar charger, 12.14 VDC, 30 A electric charger, 2 panels connected in parallel The results showed that the experiment of pumping water directly from solar energy using solar panels for 10 times had an average solar illuminance of 5,768.2 lux, a water pressure of 0.47 bar, and a solar voltage of 11.43 VDC. The water flow rate was 10.7 litters/min and the battery powered solar pump buy experiments had an average water pressure of 0.32 bar. The solar voltage from was 12.14 V rate. The water flow is 9.6 litters/min. The battery can be used for 40 minutes. From this study, it was found that buoys equipped with solar pumping systems Can be used in 2 systems: when there is sunlight and a battery charging system by experimenting can the pump can deliver water up to a size of 2 meters from the water source, applied to the agricultural sector with water sources used for agriculture, but the factor of buoyancy from the design of the floating buoy that installs a pump system with solar energy. It is research that can be developed and tested further.

Online full paper: **https://bit.ly/3ICv4C7**

ETE11:NC016

Designing and Building of Jig and Fixture for Artillery Canon

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This research aims to 1) Design and Produce jig and fixture of artillery's model. 2) Discover the efficient usage of the artillery's model for use. 3) Study the satisfaction of the user in the artillery's model usage/using. The results of the study according to the research objectives were as follows; Designing and production of the artillery's model It has a square shape structure that model from flat bar steel size 70 mm. x 144 mm. (width x length). Making a device base, device lid rocker arm and equipment cover. to secure the base and device cover with screws. For fixing the equipment with the device tightly. The drilling performance of The Artillery's model per 1 piece. It took time 07:38 minutes by using the artillery's model and took time 36:48 minutes without the device. The average time between drilling with one artillery' s model and drilling without is 29:10 minutes. The result. of the study of satisfaction of the users who used the artillery' s model that. The researchers have built and brought this device to try on the sample group found that the device user saw the working process of the artillery' s model drilling and had the overall satisfaction at the highest level (mean = 4.60 , S.D. = 0.46), design quality assessment of building device (mean = 4.63 , S.D. = 0.44), design quality assessment (mean = 4.61 , S.D. = 0.50) usability and worth assessment (mean = 4.57 , S.D. = 0.46).

Online full paper: **https://bit.ly/3ovSGBq**

ETE12:NC057

The Study of Electrical Circuit Operation of Toyota 1NZ Engine with G Scan-3

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The study of electrical circuit operation of TOYOTA 1NZ engine with G scan-3 The research aimed to 1) design and build TOYOTA 1NZ pedestal engine, 2) study the electrical circuit of TOYOTA 1NZ engine using G scan-3 analyzer, and 3) study the satisfaction of experts and participants who participate in TOYOTA 1NZ pedestal engine training program. The results of the pedestal engine which studied the electric circuit of the Toyota 1NZ engine using G scan-3 analyzer from 18 samples found that the structural assessment results (mean = 4.96, SD= 0.13). The usage assessment results (mean = 5.00, SD= 0.00). Overall were at a very good level the average efficiency (mean = 4.98, SD=0.07) The average efficiency 99.6%. Therefore, the study of electric circuit of TOYOTA 1NZ pedestal engine using G scan-3 analyzer is suitable for using as a practice set.

Online full paper: **https://bit.ly/3OvRTLA**

Vocational and Technical Education

สาขาอาชีวะและเทคนิคศึกษา

NCTechED15 **VTE01-VTE17**

VTE01:NC044

Condition of Problems and Solutions for Teaching and Learning Management of Vocational Education Institutions with Industrial Subject

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The purpose of this research was to study the condition of problems and solutions for teaching and learning management of vocational education institutions with industrial subjects. The sample group was teachers 22 person of vocational education institutions with industrial subjects. The instrument used was a focus group discussion recording form about problems and solutions for vocational institutes of industry The problem was analysed from 4 components related to teaching and learning management: people, environment, curriculum, measurement, and evaluation. The data were analysed the data by using the content analysis technique. The findings showed that the teaching and learning management problems where the environment is the inadequacy of equipment, tools, and machinery for practical teaching. There is a solution by dividing students into groups to rotate equipment and locations. Including providing materials for learners to study by themselves before doing. The results of this research can be used as a guideline for planning to develop teaching and learning efficiency.

Online full paper: **https://bit.ly/3MTPFo7**

VTE02:NC056

Study on Occupation of Graduates in Instrumentation System Engineering Course of the Faculty of Engineering, King Mongkut's University of Technology North Bangkok

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This research proposes the study on the relationship between personal factors and occupation of graduates in the instrumentation system engineering program of faculty of engineering in King Mongkut's University of Technology North Bangkok. The sample utilized for this research is the data of graduates of the four years program from 2003 until 2019. The amount of sample in the research is derived of 216 persons. The Simple Random Sampling method is used. The questionnaire based on google form is the research tool used to obtain graduates' data via internet access. The basic statistical techniques such as frequency, percentage, Chi-square based Inferential Statistics, and Pearson Product Moment Correlation are applied to analyze data for investigating the relationship between any related factors. The research result is summarized as follows:1) Factor that positively relates to the recent salary significantly in statistics at .05 is GPA and starting salary, which has a very low correlation. The factor that has a negative relationship to recent salary significantly in statistics at .01 is graduation year, which has a high level of correlation. As for, the current salary was moderately correlated. 2) Starting salary and work experience have a negative relationship significantly in statistics at .01, which has a very low correlation. The relationship between recent salary and work experience is significantly positive at .01, which has a correlation in the intermediate level. 3) The factor that relates to the business type that graduates work significantly in statistics at .05 is gender and graduation year.

Online full paper: **https://bit.ly/3q3NTHX**

VTE03:NC098

A Study of Desirable Qualifications of Accountants in The Digital Age of Food and Beverage Production Industry in Udon Thani Province

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A Study on Qualifications of Desirable Accountants in the Digital Age of Food and Beverage Production Industry in Udon Thani Province. The purpose of this research was to study qualifications of desirable accountants in the digital age of food production industry and beverage in Udon Thani province by collecting data from the 87 accounting executives of food and beverage manufacturing businesses in Udon Thani province who acted as the population of the research using questionnaires as research tools. The Descriptive statistics used in the data analysis of the research were: percentage, arithmetic mean and standard deviation. The results showed that Accounting Executives in Food and Beverage Industry Business have found that the characteristics of accountants that are desirable in the digital age at a high level are as follows: expertise in information technology, have knowledge and expertise in using a variety of computer , knowledge in the field of financial technology, have a deep understanding of payment system and enterprise software, accounting professional knowledge, have an understanding of accounting principles and accounting processes, laws, and taxation in terms of individual skills, responsible, self-disciplined, able to adapt to changes, knowledge in electronic document filing systems, have an understanding of electronic offices in electronic tax filing and payment systems, skills for understanding and using digital technology, able to apply computer to accounting work.

Online full paper: **https://bit.ly/3OC6fKv**

VTE04:NC092

Factors Affecting the Determination of Accounting Services of Accounting Firms in Buengkan Province

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The purpose of this study was to study factors affecting the determination of accounting services by accounting firms in Bueng Kan Province. The population and sample used in the research are accounting office managers, supervisors, and accountants, totalling 62 people. The tools used to collect data consisted of a questionnaire on factors affecting the determination of accounting services by accounting firms in Bueng Kan Province. The statistics used in the research were percentage, mean, and standard deviation. The study found that factors affecting the accounting firm's overall accounting service determination were at the highest average level (mean = 4.75) when considering each aspect. In order of average value from descending, as follows: Reputation of accounting firms providing services (mean = 4.83) Technology change (mean = 4.81) Other services (mean = 4.78) Quantity documents used in accounting (mean = 4.77), customer business characteristics (mean = 4.73), service provider factors (mean = 4.71), and accounting risks (mean = 4.73).

Online full paper: **https://bit.ly/3Wu11SO**

VTE05:NC091

Factors Affecting Vat Filing of Juristic Person Entrepreneurs Registered as a Juristic Person with The Department of Business Development, Bueng Kan Province for The Year 2022

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The purpose of this study was to study Factors affecting VAT filing (Por Por 30) of juristic person entrepreneurs registered with the Department of Business Development in Bueng Kan Province for the year 2022. The sample group used in the study was juristic person entrepreneurs. registered as a juristic person with the Department of Business Development in Bueng Kan Province And entering the VAT system for the year 2022, a total of 51 people. The research tools were questionnaires. The statistics used in the research were percentage, mean and standard deviation. The results showed that factors affecting vat filing (por por 30) of juristic person entrepreneurs. registered as a juristic person with the department of business development, bueng kan province for the year 2022, Overall, it was at a high level have average 4.13, consider item by item sort descending order found that Deadline in the form submission 4.13 Knowledge about VAT 4.08 Stability of entrepreneur 4.05 and financial liquidity 4.04Keywords: factors, problems, revenue.

Online full paper: **https://bit.ly/3BUsVOy**

VTE06:NC101

Choosing A Competitive Logistics Strategy in The Road Transport Business A Case Study of A Transport Company In Udon Thani

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At present, entrepreneurs face more intense competition in the road transport business. In addition, the government that is not efficient and effective enough to support the demand for services by consumers. whish has a lot of problems in transportation business. This research aimed to study logistics management strategies. and factors affecting the selection of strategies to build the competitiveness of the road transport business. A case study of road transport operators in Udon Thani Province from research studies found that enterprises focus on the three strategies the most at 70%. The low cost business strategy is at 27% and the focus is on the niche business strategy at 3%. M(Service Quality Management) C(Cost Management) H(Human Resources) S

(Price Strategy)

Online full paper: **https://bit.ly/3MtHpcZ**

VTE07:NC097

Knowledge And Understanding of Corporate Income Tax Payment of Industrial Businesses in Udon Thani Province

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Knowledge and understanding of corporate income tax payment of industrial businesses in Udon Thani Province The objective is to study the knowledge and understanding of corporate income taxpayment of industrial businesses in Udon Thani Province. By collecting information from the sample, namely 248 executives of the accounting department of industrial businesses in Udon Thani Province, using the questionnaire as a research tool. Statistics used in data analysis are percentages, average and standard deviations. The research found that the accounting executives of industrial businesses in Udon Thani Province have opinions on knowledge and understanding of corporate income tax payment of industrial businesses in Udon Thani Province as a whole, and the details are at a high level as follows: knowledge about the withholding income tax payment form of corporate income tax payment form. The percentage of withholding tax returns of each type. Filing corporate income tax returns include the duration of filing corporate income tax returns related laws include penalties for late tax filing penalties for avoiding corporate income tax.

Online full paper: **https://bit.ly/3q8YUYF**

VTE08:NC047

A Study of the Relationship between Modern Accounting Profession Ethics and Performance Success of Cooperative Auditors in the Upper Northeastern Region; Case Study: The Cooperative Auditing Office in Nongkhai, Udonthani and Buengkan

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The purpose of this study was to study Modern Professional Accounting Ethics which effect on the Performance success of Cooperative Auditing Scholars in the Upper Northeastern Region, A Case Study; Cooperative Auditing Office in Nong Khai, Udonthani, and Bueng Kan. The populations were 53 Cooperative Auditing Scholars. The tools were questionnaires about Modern professional ethics and operational success. The reliability was at 0.93. The statistics for data analysis were: Percentage, Mean and standard deviation. The analysis of the data showed that the overall of ethics in modern accounting profession are at the highest level, (mean = 4.52, S.D. = 0.38) When considered on a descending side, it was found that confidentiality was the highest (mean = 4.62, S.D. = 0.38) Next, abilities in duties were at the highest level, (mean = 4.58, S.D. = 0.39) Then, operational standards were at a high level (mean = 4.49, S.D. = 0.34) and stability was at a high level (mean = 4.40, S.D. = 0.43) The ethics in Modern Accounting Profession was a correlation with the success in the performance of academic cooperative auditors. Statistically significant is 0.01 level in all aspects, with the highest level of relationship in 2 aspects, with very high level in 2 aspects. When considering side by side sorted from most to least, it was found that, the standard of work is at the highest level(r = 0.93**), the competency in duty is at the highest level(r = 0.87**), the confidentiality very high level(r = 0.73) and in terms of a stable stand, it is at a very high level (r = 0.60**).

Online full paper: **https://bit.ly/3ICX1dc**

VTE09:NC012

Efficiency Improvement of Logistics Management of Thana Logistics Co., Ltd. In the Northeastern Region, Case Study: Ubon Ratchathani Branch, Nong Khai Branch, Chong Mek Branch and Mukdahan Branch

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The purposes of this study were to 1) study the factors that contribute to the efficiency improvement of logistics management at Thana Logistics Co., Ltd., and 2) study the relationship of logistics management factors that affect logistics management efficiency. The sample group was all personnel, 53 people, in the northeastern region of Thana Logistics Co., Ltd. The research instrument was a questionnaire on factors affecting the efficiency of logistics management. The statistics used in data analysis were percentage, mean, standard deviation, and correlation coefficient. The reliability was 0.85. The results of the study found that the overall logistics management factor was at a high level ($\mu = 4.25$, $\sigma = 0.24$). When considering each aspect in descending order, it was found that the cost management factor was at a high level ($\mu = 4.49$, $\sigma = 0.31$). The customer service factor was at a high level ($\mu = 4.40$, $\sigma = 0.32$). Logistics communication factors were at a high level ($\mu = 4.38$, $\sigma = 0.44$). The warehouse management factor was at a high level ($\mu = 4.16$, $\sigma = 0.34$). The inventory management factor was at a high level ($\mu = 4.10$, $\sigma = 0.41$). And the transportation management factor was at a high level ($\mu = 4.10$, $\sigma = 0.41$). The overall logistics management efficiency was at a high level ($\mu = 4.24$, $\sigma = 0.27$). When considering each side by ordering the average from the most to the least, it was found that the efficiency in delivering reliability was at a high level ($\mu = 4.28$, $\sigma = 0.37$). The efficiency of the feedback from the rate of increasing the number of service users was at a high level ($\mu = 4.23$, $\sigma = 0.40$). Transportation speed efficiency was at a high level ($\mu = 4.22$, $\sigma = 0.33$). The correlation coefficient of the relationship between logistics management factors and logistics management efficiency on each side had a statistically significant positive correlation at the .01 level and a moderate correlation on every side.

Online full paper: **https://bit.ly/3WsYY1t**

VTE10:NC014

Relationship between Professional Accounting Skills in the Digital Age and Work Efficiency of Local Administrative Organization Accountants in Muang Nong Khai District, Nong Khai

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The purposes of this study were to 1) study accounting professional skills in the digital era in the work of accountants, 2) study the work efficiency of accountants, and 3) study the relationship between accounting professional skills in the digital age and the work efficiency of accountants. The sample group was 100 supervisors and accountants. The research instrument was a questionnaire to research the relationship between professional accounting skills in the digital era and the work efficiency of accountants. The study found that accountants' overall level of opinion on professional accounting skills in the digital era was high in all six areas. When considering each side from the most to the least, it was communication were at the highest level ($\mu = 4.55$, $\sigma = 0.29$), analysis and problem solving were at found that accounting professional ethics was at the highest level ($\mu = 4.56$, $\sigma = 0.27$), personnel and the highest level ($\mu = 4.52$, $\sigma = 0.36$), knowledge and accounting ability were at a high level ($\mu = 4.50$, $\sigma = 0.30$), organizational management skills were at a high level ($\mu = 4.48$, $\sigma = 0.33$), and digital technology at a high level ($\mu = 4.40$, $\sigma = 0.33$). The overall performance of the accountants was at the highest level. When considering each side from the most to the least, it was found that time was at the highest level ($\mu = 4.59$, $\sigma = 0.33$). Throughput was at the highest level ($\mu = 4.57$, $\sigma = 0.33$), and the quality was at a high level ($\mu = 4.48$, $\sigma = 0.35$). Pearson's correlation coefficient analysis between professional accounting skills in the digital era and the work efficiency of accountants found that the time aspect had a positive relationship with all aspects of professional accounting skills in the digital era. The quality was positively correlated with three aspects of professional accounting skills in the digital era. And the workload had a positive relationship with professional accounting skills in the digital era in two aspects. The statistically significant was at the .01 level.

Online full paper: **https://bit.ly/3MTUzBo**

VTE11:NC090

The Impact of a Digital Accounting System on Accountants In Udon Thani Business Organizations

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The purposes of this study were to study the impact of a digital accounting system on accountants in Udon Thani business organizations, 585 locations, 1 person each, for a total of 585 people. Cluster Sampling was used to select them. The sample group was 238 accounting officers of companies in Udon Thani province. And the questionnaire was used as a research tool. The reliability was 0.95. The statistics used in data analysis were percentage mean and standard deviation. When considering each side, it was found that there was little impact in all aspects as follows: organizational strategy (mean = 2.08, S.D. = 0.25), organizational structure (mean = 1.94, S.D. = 0.28), and organizational culture (mean = 1.87, S.D. = 0.29). When considering each side, it was found that there were fewer impacts in all aspects as follows : the changing role of an accountant (mean = 2.04, S.D. = 0.33), the characteristics of the accountant that the organization expected (mean = 1.81, S.D. = 0.34), using digital accounting systems skills (mean = 1.59, S.D. = 0.28) and the impact on accountants (mean = 1.50, S.D. = 0.26).

Online full paper: **https://bit.ly/3MTBLlK**

VTE12:NC008

The Study of Skills of the Accounting Profession on Accounting office in Muang District Udon Thani Province

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The objective of this paper is to determine skills of accounting profession in the next decade of accounting office in Muang district Udon Thani province. This study uses survey research to gather data from 32 accounting office executive in Muang district Udon Thani province. Questionnaires were adopted as a research tool. The statistics used to analyze the data were percentage, mean and standard deviation. The study results revealed that accounting office executive in Muang district Udon Thani province rated their opinions on skills of accounting profession in the next decade overall areas and each aspect at high level as follows. Consist of Fundamental knowledge of accounting professions, Good governance, Adaptability and Creativity, English language communication skill, and Cross disciplinary knowledge and contemporary information technology skill. These five skills of accounting profession are the challenges in accountant development to be ready in all aspects so that Thai accountants will have ability to work in the changing global economy environments, and will not be disrupted by information technology in the future.

Online full paper: **https://bit.ly/4227MMP**

VTE13:NC032

Factors Pertaining to Debt Default of Kawasaki Motorcycle Hire-Purchase Debtors Leng Motor Nong Khai Limited Partnership

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The purpose of this study was to study the factors affecting debt default of hire-purchase receivables for KAWASAKI motorcycles, Leng Motor Nong Khai Limited Partnership. The questionnaire was used as a research tool. The population was 689 hire purchase debtors on KAWASAKI motorcycles who defaulted on payment from 1 installment, and 253 hire purchase debtors were the sample group. Taro Yamane's formula was used to calculate the sample size. The sample was determined by the incidence method. The statistical value was calculated by using a computer program, and the reliability test result of the tool was .90. And analyzed by using descriptive statistics such as arithmetic, mean, and standard deviation. The analysis of variance was one-way ANOVA. The result of the study showed the factors affecting debt default of hire-purchase receivables for KAWASAKI motorcycles, Leng Motor Nong Khai Limited Partnership were generally at a moderate level as follows; External factors (mean =1.86, S.D.=1.21) business factors (mean =2.10, S.D.= 1.30) and internal factors (mean =1.74, S.D.= 1.11)

A comparison of the factors affecting the debt default of hire-purchase receivables for KAWASAKI motorcycles, Leng Motor Nong Khai Limited Partnership, and the personal information of the respondents found that occupation, monthly income, and the different installment payments affected the debt default of hire-purchase receivables for KAWASAKI motorcycles no differently, with the statistical significance at the level of .05.

Online full paper: **https://bit.ly/45ECyP0**

VTE14:NC011

Opinions of Enterprises Towards the Skills of Vocational Training Studying in Bachelor Degree of Technology in Accounting Program (Continuing), Nong Khai Vocational College

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The purpose of this study was to study the opinions of enterprises towards the skills of vocational training students in enterprises in the Bachelor of Technology in accounting program (continuing) at Nong Khai Vocational College. The population and sample used in the study were directors/managers of 62 establishments where students had internship experience (Academic Year 2017 - 2021), 1 person each, the totaling were 62 people. The tool used to collect information for the research was a questionnaire. The Reliability was at 0.91. The statistics were percentage, mean, and standard deviation. The results of the study on the level of opinions of enterprises toward the skills of vocational training students in the Bachelor of Technology Program in Accounting (continuing) at Nong Khai Vocational College were generally at a high level. When considering each side by ordering the average from the most to the least, it was found that human relations with the organization and colleagues ("μ" = 3.83, σ = 0.397), operational knowledge ("μ" = 3.81 , σ = 0.390), information technology applications ("μ" = 3.80 , σ = 0.408), and initiative and individual intelligence and morality, ethics and professional ethics ("μ" = 3.78 , σ = 0.391).

Online full paper: **https://bit.ly/3pZtjbA**

VTE15:NC041

The Construction and Compare the Achievement Validation of Training Package on the Topic of Photovoltaic Stand-alone System

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This research was experimental research. The objectives were, 1) to create a learning Package on the autonomous photovoltaic power generation System, 2) to compare the pre-learning and post-learning achievements with a learning package on autonomous photovoltaic power generation system, 3) to study the satisfaction. Satisfaction of the student with the learning package on autonomous photovoltaic power generation systems. The researcher conducted the research by using the created of the learning package which consisted of the learning package, teacher couple student couple. Achievement Measurement that has been evaluated by experts to experiment with a sample group who is a vocational teacher student at the bachelor's degree level Vocational Teacher Course Institute of Vocational Development, Lao PDR (2019 Curriculum), Department of Electrical and Mining Engineering Teacher, Institute of Vocational Development, Lao PDR. Who enrolled in renewable energy course by using purposive sampling 30 students. The results showed that the learning packages created after expert evaluations was at a high level of appropriateness (mean =4.39, S.D =0.13) higher than before statistically significant at the .05 level and the results of assessing student satisfaction with the created learning package. At a high level (mean =4.27, S.D =0.34). Therefore, the created autonomous photovoltaic power generation system can be applied with a high degree of suitability.

Online full paper: **https://bit.ly/3q6B1AO**

VTE16:NC096

Household Account Model of Retail and Wholesale Business In Muang District, Loei Province

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The objectives of this research are: 1) To study the knowledge and understanding of accounting of the retail and wholesale business in Muang District, Loei Province. 2) To find the ways to create model for accounting of the retail and wholesale business in Muang District, Loei Province. 3) To study the problems and obstacles in accounting of the retail and wholesale business in Muang District, Loei Province. The population in this research was a group of 128 retail and wholesale entrepreneurs in Loei Province. The statistics used in the data analysis were percentage, mean, standard deviation. The statistical data was analyzed by using a statistical package software for research. The results of this research found that group of retail and wholesale entrepreneurs, mostly women 88.28%, age 31 – 40 years old 57.03%, the position that answered the questionnaire was an accountant 78.13 percent. Graduated with a high vocational certificate 82.81%. Work experience in accounting less than 5 years 51.57%. The results of the cognitive analysis of retail and wholesale entrepreneurs found that entrepreneurs have a moderate level of overall knowledge and understanding (mean = 2.80, S.D. = 0.97). Considering individually, it was found that emphasize the importance of correct and complete accounting documents, at a moderate level (mean = 3.20, S.D. = 0.97). The results of the analysis of accounting models for retail and wholesale businesses found that the form of accounting for retail and wholesale businesses was at the highest level (mean = 4.91, S.D. = 0.12). Considering individually, it was found that emphasize the importance of being able to recognize operating results from accounting and the accounting preparation is accurate, complete, on time, at the highest level (mean = 4.98, S.D. = 0.14). The results of the analysis of problems and obstacles in accounting found that problems and obstacles in accounting for retail and wholesale businesses were generally at a high level (mean = 3.76, S.D. = 0.98). Considering individually, it was found that knowledge and understanding are insufficient in accounting at a high level (mean = 4.09, S.D. = 1.10).

Online full paper: **https://bit.ly/3IEPxGu**

VTE17:NC005

Study on Characteristics of Desirable Characteristics of Accountants in Muang District, Nongbualamphu Province

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The purpose of this research was to Study on Characteristics of Desirable Characteristics of Accountants in Muang District, Nongbualamphu Province There were 220 people and 140 samples. Tools used to collect data. by questionnaires by collecting questionnaires themselves Statistics used in data analysis were percentage, mean and standard deviation. to analyze the data using Content Validity (Content Validity) The tool used in research to find the consistency between each question and the purpose of the content (Index of item Objective Congruence or IOC) is equal to 0.970. and the reliability test of the tool was equal to 0.831. The study found that there were opinions about the desired accountant of entrepreneurs in Muang Nongbualamphu District. The overall level of opinions is at a high level. And when considering each aspect, there were opinions at a high level of 1) professional ethics in accounting, 2) computers, 3) languages, 4) accounting professions, and 5) laws allowed by account holders.

Online full paper: **https://bit.ly/4233fcY**

ICTechED10

10th International Conference on Technical Education

A01

Investigating the Factor Analysis of Community Enterprise Innovation Management in Nakhon Si Thammarat Province

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The objective of this research was to investigate the factor analysis that community enterprise innovation management of Phrom Khiri Community Enterprise (PHKCE) in Nakhon Si Thammarat Province. The research design was a quantitative cross-sectional method. Participants were 51 partnerships of PHKCE sector that selected by purposive sampling, and enrolled surveying agricultural products groups and tourism services groups. Data were obtained by a questionnaire to the directly delivered with the researcher. Data was analyzed by mean, standard deviation and multivariate analysis, were applied the Kaiser-Meyer-Olkin (KMO) test of adequacy sampling method and the Bartlett's sphericity test. The research results revealed that the four factors for guidelines PKHCE partnerships as follow as: adaptation technology,financial efficiency, lifelong learning, market opportunities were associated a positive and statistical significance respectively.

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A02

Career Advancement Factors on Architects and Engineers in Construction Companies

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This study investigates the career advancement paths of architects and engineers, which require specific competencies, education, experience, and qualifications. While previous studies have focused on operational competencies, this research aims to identify the support factors necessary for architects and engineers to advance in their careers. Furthermore, organizations have varying policies on personnel development, and some professionals in the construction industry experience extended tenure without career progression. Thus, this study aims to help individuals seeking career advancement by examining the necessary factors that affect career development from the perspectives of architects and engineers. The research investigates their opinions on the supporting factors for career development required for success in their fields Factors that are opportunities for career advancement is personal development from experience, Choosing the right person for the job and preparation for change, Supporting talented people. Ultimately, This study aims to provide insights into the career progression of architects and engineers and improve career development plans in the construction industry, benefiting both individuals and organizations.

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A03

Mitigation of Construction Management Problems Causing Delays in Power Plant Construction Project

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The purpose of this research is to identify ways to reduce or mitigate the factors causing delays in managing power plant construction projects, which were divided into two phases:project operation and project closure, by gathering data from in-depth interviews with members of the sample group who have knowledge of and work in the management of power plant construction projects. According to the study, construction management issues frequently cause delays of over two months in crucial activities for power plant construction projects. While this delay is considered excusable, it is not compensated. Most of these delays are caused by external factors beyond the control of project stakeholders. To address this problem, interviewees recommended the following measures: (1) The project owner may encounter problems obtaining permission from government agencies, which may require additional documents due to changes in the project area. To address this issue, the project owner should conduct a survey of the area and update the information to ensure it is current before commencing the project. If approval from other agencies is also required, the project owner should develop a plan to expedite the approval process by coordinating with relevant government agencies and top management to ensure a smooth process. (2) The COVID-19 pandemic has resulted in delays in equipment delivery from abroad,and specialists are unable to enter Thailand, leading to a shortage of labor. In response, contractors should consider using locally available equipment with comparable specifications and reliability,or temporary equipment, and adjust their work methods to be conducted online. Contractors should also coordinate with relevant agencies to discuss guidelines for obtaining permission to work in the country and recruit additional local labor to mitigate labor shortages.

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Author Index

The 10th International Conference on Technical Education

"The New Global Megatrends and Engineering Education"

June 8-9, 2023

at ARCADIA AUDITORIUM, Faculty of Architecture and Design
and Faculty of Technical Education

King Mongkut's University of Technology North Bangkok

About ICTechEd 2023:

Currently is a crucial time for Thailand and many other countries to push forward the development of all aspects required to strengthen the country's competitiveness in an exceedingly competitive global economy. The Sufficiency Economy Philosophy has been and continues to be an integral component of development strategy, as it underpins the promotion of moderation, reasonableness, and resilience. A combination of Sustainable Development Goals: SDGs are the plan for a healthier, more sustainable future for all. These concepts have made a significant contribution to balancing change and greater concentration on "Global Megatrends" by encouraging the progress of science, technology, research, and innovation.

The Faculty of Technical Education (FTE), King Mongkut's University of Technology North Bangkok (KMUTNB) has continuously concentrated on producing and developing qualified technical teachers at Bachelor's, Master's, and Doctoral levels while conducting and publicizing research in both technical education and engineering over 53 years. That is a consequence of the academic cooperation between the Thai Government and the Federal Republic of Germany, especially in the knowledge transfer regarding the "Engineering Teacher". Until now, FTE has always encouraged instructors, students, and researchers to research vocational development for quality education, learning, and skills enhancement.

In association with AITET for 10 years, The 15th National Conference on Technical Education (NCTechED15) and The 10th International Conference on Technical Education (ICTechED10) will be organized under the theme of "The New Global Megatrends and Engineering Education" The objective of The 10th ICTechED is to provide an international forum for researchers, academicians as well as engineers to initiate, distribute, and exchange knowledge, new ideas, and application experiences about engineering and technical

education to establish a sound foundation for future industries and capture opportunities from global trends and technology.

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11.	ผู้ช่วยศาสตราจารย์ ดร.รักษ์ศิริ	สุขรักษ์	กรรมการ
12.	อาจารย์ ดร.อโนมา	ศิริพานิช	กรรมการ
13.	อาจารย์ ดร.ภราดร	เสถียรไชยกิจ	กรรมการ
14.	อาจารย์ ดร.กฤติรัช	ยอเซ่ง	กรรมการ
15.	นางสาววลัยพร	ยอดคำมี	กรรมการและเลขานุการ

คณะกรรมการจัดทำเอกสารและประชาสัมพันธ์

1.	อาจารย์ ดร.สมคิด	แซ่หลี	ประธานกรรมการ
2.	ผู้ช่วยศาสตราจารย์ ดร.สยาม	แกมขุนทด	กรรมการ
3.	ผู้ช่วยศาสตราจารย์ ดร.วัฒนา	แก้วมณี	กรรมการ
4.	ผู้ช่วยศาสตราจารย์ ดร.ดวงกมล	โพธิ์นาค	กรรมการ
5.	อาจารย์ ดร.สามารถ	สว่างแจ้ง	กรรมการ
6.	นายประจักษ์เวช	ดีวี	กรรมการ
7.	นายเขมวันต์	จันทรังษี	กรรมการ
8.	นายวีระเชษฐ์	มะแซ	กรรมการ
9.	นางสาววลัยพร	ยอดคำมี	กรรมการ
10.	นางสาวกณิตา	กลนาม	กรรมการและเลขานุการ
11.	นางสาวรติภัทร	ไกรศรีวรรธนะ	กรรมการและผู้ช่วยเลขานุการ
12.	นางสาวศิริพร	ยางสวย	กรรมการและผู้ช่วยเลขานุการ

คณะกรรมการดำเนินงานและการเงิน

1.	รองศาสตราจารย์ ดร.สมศักดิ์	อรรคทิมากูล	ประธานกรรมการ
2.	นางสาวเมลดา	กลิ่นมาลี	รองประธานกรรมการ
3.	นางสาววรทัย	ประจักษ์เพิ่มศักดิ์	รองประธานกรรมการ
4.	นางกนกภัทร	คูพิพัฒน์ไพศาล	กรรมการ
5.	นางชวนชม	สิบพันทา	กรรมการ
6.	นางสาวพัชรี	เอี่ยมสุข	กรรมการ

7.	นางสาวภณิตา	อยู่เจริญ	กรรมการ
8.	นางสมพิศ	เกษมราษฎร์	กรรมการ
9.	นางสาวปาริชาต	คชลุน	กรรมการ
10.	นายกฤตินันท์	เพ็ชรศรี	กรรมการ
11.	นายวิทวัส	จันทะมูลลา	กรรมการ
12.	นายสุกฤต	อุจะรัตน	กรรมการ
13.	นางสาวรัตนาภรณ์	ใจเจริญ	กรรมการ
14.	นางปะนะรี	ปัญญาชีวิตา	กรรมการ
15.	ว่าที่ ร.ต.หญิงสุภารัตน์	วิริยโรจนกุล	กรรมการ
16.	นางศิริรักษ์	สุขสุด	กรรมการ
17.	นางสาวเนตรนภา	สุขมงคล	กรรมการ
18.	นางสาวกรวรรณ	สิบพันทา	กรรมการ
19.	นางชญานิษฐ์	หาญรินทร์	กรรมการ
20.	นางสาวพรฤดี	สุละพาน	กรรมการ
21.	นางสาวอัญมณี	ภูชิน	กรรมการ
22.	นางสาวพีรยาภรณ์	สุละพาน	กรรมการ
23.	นางสาวดวงกมล	ปทุมชาติ	กรรมการ
24.	นางสาวพัชรี	ใยยินดี	กรรมการ
25.	นางสาวธัชพรรณ	กลิ่นเมธี	กรรมการและเลขานุการ
26.	นางสาวสุภาพร	เช่งไพเราะ	กรรมการและผู้ช่วยเลขานุการ
27.	นางสาวศิริพร	ยางสวย	กรรมการและผู้ช่วยเลขานุการ
28.	นางธิภาภัทร	บุญยะผลานันท์	กรรมการและผู้ช่วยเลขานุการ

คณะกรรมการฝ่ายประชาสัมพันธ์และพิธีการ

1.	อาจารย์ ดร.ธีรพงษ์	วิริยานนท์	ประธานกรรมการ
2.	ผู้ช่วยศาสตราจารย์ ดร.สุชัญญา	โปษยะนันทน์	รองประธานกรรมการ
3.	อาจารย์ ดร.พุทธิดา	สกุลวิริยกิจกุล	กรรมการ
4.	อาจารย์ ดร.ปิยรัตน์	เปาเล้ง	กรรมการ
5.	นางสาวอนุมาศ	บุญลอย	กรรมการ
6.	นายประจักษ์เวช	ดีวี	กรรมการ
7.	นายเขมวันต์	จันทรังษี	กรรมการ
8.	นายวีระเชษฐ์	มะแซ	กรรมการ

9.	นางสาวศิริพร	ยางสวย	กรรมการและเลขานุการ
10.	นางสาวรัตนาภรณ์	ใจเจริญ	กรรมการและเลขานุการ
11.	นางภคสมณฑ์	อุชชิน	กรรมการและผู้ช่วยเลขานุการ

คณะกรรมการฝ่ายจัดประชุมวิชาการแบบออนไลน์

1.	อาจารย์ ดร.สมคิด	แซ่หลี	ประธานกรรมการ
2.	อาจารย์ ดร.ปิยะ	กรกชจินตนาการ	รองประธานกรรมการ
3.	อาจารย์ ดร.พุทธิดา	สกุลวิริยกิจกุล	กรรมการ
4.	นายวีระเชษฐ์	มะแซ	กรรมการ
5.	นายสุกฤต	อุจะรัตน	กรรมการ
6.	นายสุพพัต	กองแก้ว	กรรมการและเลขานุการ
7.	นางสาวกณิตา	กลนาม	กรรมการและเลขานุการ

คณะกรรมการผู้ดำเนินการนำเสนอบทความประจำกลุ่ม (Chair Session)

1.	รองศาสตราจารย์ ดร.สมศักดิ์	อรรคทิมากูล	ประธานกรรมการ
2.	อาจารย์ ดร.ปิยะ	กรกชจินตนาการ	รองประธานกรรมการ
3.	ผู้ช่วยศาสตราจารย์ ดร.สยาม	แกมขุนทด	รองประธานกรรมการ
4.	อาจารย์ ดร.สมคิด	แซ่หลี	รองประธานกรรมการ
5.	รองศาสตราจารย์ ดร.ศักดา	กตเวทวารักษ์	กรรมการ
6.	อาจารย์ ดร.ปิยรัตน์	เปาเล้ง	กรรมการ
7.	ผู้ช่วยศาสตราจารย์ ดร.จิรพันธุ์	ศรีสมพันธุ์	กรรมการ
8.	อาจารย์ ดร.พุทธิดา	สกุลวิริยกิจกุล	กรรมการ
9.	ผู้ช่วยศาสตราจารย์ ดร.นุชนาฏ	ชุ่มชื่น	กรรมการ
10.	รองศาสตราจารย์ ดร.กิตติวุฒิ	ศุทธิวิโรจน์	กรรมการ
11.	ผู้ช่วยศาสตราจารย์ ดร.ต้องชนะ	ทองทิพย์	กรรมการ
12.	ผู้ช่วยศาสตราจารย์ ดร.กฤช	สินธนะกุล	กรรมการ
13.	ผู้ช่วยศาสตราจารย์ ดร.วาทินี	นุ้ยเพียร	กรรมการ
14.	ผู้ช่วยศาสตราจารย์ ดร.ดวงกมล	โพธิ์นาค	กรรมการ
15.	รองศาสตราจารย์ ดร.พินันทา	ฉัตรวัฒนา	กรรมการ
16.	อาจารย์ ดร.อโนมา	ศิริพานิช	กรรมการ
17.	รองศาสตราจารย์ ดร.ชัยวิชิต	เชียรชนะ	กรรมการ
18.	อาจารย์ ดร.สามารถ	สว่างแจ้ง	กรรมการ

19. นางสาววลัยพร	ยอดคำมี	กรรมการและเลขานุการ
20. นายอนัณ	เนตรเจริญ	กรรมการและ ผู้ช่วยเลขานุการ

รายชื่อคณะกรรมการบรรณาธิการ

1. รองศาสตราจารย์ ดร.สมศักดิ์ อรรคทิมากูล ประธานกรรมการ
   คณะครุศาสตร์อุตสาหกรรม มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
2. รองศาสตราจารย์ ดร.บัณฑิต สุขสวัสดิ์ รองประธานกรรมการ
   คณะครุศาสตร์อุตสาหกรรม มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
3. อาจารย์ ดร.ปิยะ กรกชจินตนาการ รองประธานกรรมการ
   คณะครุศาสตร์อุตสาหกรรม มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
4. ผู้ช่วยศาสตราจารย์ ดร.สุชัญญา โปษยะนันทน์ กรรมการ
   คณะครุศาสตร์อุตสาหกรรม มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
5. ผู้ช่วยศาสตราจารย์ ดร.สุรวุฒิ ยะนิล กรรมการ
   คณะครุศาสตร์อุตสาหกรรม มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
6. รองศาสตราจารย์ ดร.มีชัย โลหะการ กรรมการ
   คณะครุศาสตร์อุตสาหกรรม มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
7. รองศาสตราจารย์ ดร.ศักดา กตเวทวารักษ์ กรรมการ
   คณะครุศาสตร์อุตสาหกรรม มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
8. ผู้ช่วยศาสตราจารย์ ดร.ธัญญรัตน์ น้อมพลกรัง กรรมการ
   คณะครุศาสตร์อุตสาหกรรม มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
9. ผู้ช่วยศาสตราจารย์ ดร.สวนันท์ แดงประเสริฐ กรรมการ
   คณะครุศาสตร์อุตสาหกรรม มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
10. อาจารย์ ดร.อโนมา ศิริพานิช กรรมการ
    คณะครุศาสตร์อุตสาหกรรม มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
11. รองศาสตราจารย์ ดร.กิติพงค์ มะโน กรรมการ
    คณะครุศาสตร์อุตสาหกรรมและเทคโนโลยี สถาบันเทคโนโลยีพระจอมเกล้าเจ้าคุณทหารลาดกระบัง
12. อาจารย์ ดร.ราตรี ศิริพันธุ์ กรรมการ
    คณะครุศาสตร์อุตสาหกรรมและเทคโนโลยี สถาบันเทคโนโลยีพระจอมเกล้าเจ้าคุณทหารลาดกระบัง
13. รองศาสตราจารย์ ดร.ธเนศ ธนิตย์ธีรพันธ์ กรรมการ
    คณะครุศาสตร์อุตสาหกรรมและเทคโนโลยี มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าธนบุรี
14. ผู้ช่วยศาสตราจารย์ อานนท์ นิยมผล กรรมการ
    คณะครุศาสตร์อุตสาหกรรม มหาวิทยาลัยเทคโนโลยีราชมงคลธัญบุรี
15. ผู้ช่วยศาสตราจารย์ ดร.กิจจา ไชยทนุ กรรมการ

คณะวิศวกรรมศาสตร์ มหาวิทยาลัยเทคโนโลยีราชมงคลล้านนา

16. ผู้ช่วยศาสตราจารย์ ดร.รุ่งอรุณ พรเจริญ กรรมการ
คณะครุศาสตร์อุตสาหกรรม มหาวิทยาลัยเทคโนโลยีราชมงคลพระนคร
17. ผู้ช่วยศาสตราจารย์ ปิยะ ประสงค์จันทร์ กรรมการ
คณะครุศาสตร์อุตสาหกรรมและเทคโนโลยี มหาวิทยาลัยเทคโนโลยีราชมงคลศรีวิชัย
18. ผู้ช่วยศาสตราจารย์ เดชา พลเสน กรรมการ
คณะครุศาสตร์อุตสาหกรรม มหาวิทยาลัยเทคโนโลยีราชมงคลสุวรรณภูมิ
19. ผู้ช่วยศาสตราจารย์ ดร.สมเกียรติ เติมสุข กรรมการ
คณะครุศาสตร์อุตสาหกรรม มหาวิทยาลัยเทคโนโลยีราชมงคลอีสาน
20. นายประพันธ์ ยาวระ กรรมการ
คณะครุศาสตร์อุตสาหกรรม มหาวิทยาลัยเทคโนโลยีราชมงคลอีสาน
21. นายสุระศักดิ์ ศรีปาน กรรมการ
คณะครุศาสตร์อุตสาหกรรม มหาวิทยาลัยเทคโนโลยีราชมงคลกรุงเทพ
22. นางสาววลัยพร ยอดคำมี กรรมการ
คณะครุศาสตร์อุตสาหกรรม มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
23. นางสาวศิริพร ยางสวย กรรมการ
คณะครุศาสตร์อุตสาหกรรม มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ

รายนามผู้ทรงคุณวุฒิพิจารณาบทความ (ภายใน)

1	รองศาสตราจารย์ ดร.กิตติวุฒิ ศุทธิวิโรจน์	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
2	ผู้ช่วยศาสตราจารย์ ดร.ต้องชนะ ทองทิพย์	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
3	ผู้ช่วยศาสตราจารย์ ดร.ธีรพรรณ แซ่แห่ว	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
4	ผู้ช่วยศาสตราจารย์ ดร.ขนิษฐา หินอ่อน	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
5	อาจารย์ ดร.สมคิด แซ่หลี	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
6	ผู้ช่วยศาสตราจารย์ ดร.กิตติศักดิ์ แพบัว	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
7	ผู้ช่วยศาสตราจารย์ ดร.จิรพันธุ์ ศรีสมพันธุ์	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
8	ผู้ช่วยศาสตราจารย์ ดร.วรรณชัย วรรณสวัสดิ์	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
9	อาจารย์ ดร.พุทธิดา สกุลวิริยกิจกุล	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
10	รองศาสตราจารย์ ดร.ชัยวิชิต เชียรชนะ	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
11	ผู้ช่วยศาสตราจารย์ ดร.รักนรินทร์ แสนราช	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ

12	อาจารย์ ดร.เกษมศิลป์ อ่อนทอง	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
13	อาจารย์ ดร.กิติศักดิ์ ฉิมกลิ่น	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
14	รองศาสตราจารย์ ดร.ศักดา กตเวทวารักษ์	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
15	รองศาสตราจารย์ ดร.สุนีย์ วรรธนโกมล	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
16	รองศาสตราจารย์ ดร.วัชรินทร์ โพธิ์เงิน	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
17	อาจารย์ ดร.ปิยรัตน์ เปาเล้ง	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
18	รองศาสตราจารย์ เรือโท ดร.ทวีศักดิ์ รูปสิงห์	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
19	ผู้ช่วยศาสตราจารย์ ดร.ณฐา เศวตนรากุล	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
20	ผู้ช่วยศาสตราจารย์ ดร.สยาม แกมขุนทด	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
21	ผู้ช่วยศาสตราจารย์ ดร.กฤษดา ศรีจันทร์พิยม	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
22	ผู้ช่วยศาสตราจารย์ ดร.กฤช สินธนะกุล	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
23	รองศาสตราจารย์ ดร.พินันทา ฉัตรวัฒนา	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
24	ผู้ช่วยศาสตราจารย์ ดร.ชัยยศ ดำรงกิจโกศล	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
25	ผู้ช่วยศาสตราจารย์ ดร.ดวงกมล โพธิ์นาค	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
26	รองศาสตราจารย์ ดร.พรรณราย ละตา	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
27	ผู้ช่วยศาสตราจารย์ ดร.อิทธิพล มีผล	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
28	รองศาสตราจารย์ ดร.สมศักดิ์ อรรมทิมากูล	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
29	อาจารย์ ดร.อโนมา ศิริพานิช	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
30	ผู้ช่วยศาสตราจารย์ ดร.นุชนาฏ ชุ่มชื่น	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
31	ผู้ช่วยศาสตราจารย์ ดร.กิตติ เสือแพร	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
32	รองศาสตราจารย์ ดร.มนตรี ศิริปรัชญานันท์	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ
33	อาจารย์ ดร.พรสวรรค์ จันทะคัด	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ

รายนามผู้ทรงคุณวุฒิพิจารณาบทความ (ภายนอก)

1	ผู้ช่วยศาสตราจารย์ ดร.นิพนธ์ ทางทอง	มหาวิทยาลัยเทคโนโลยีราชมงคลธัญบุรี
2	รองศาสตราจารย์ ดร.สุวิมล กฤชคฤหาสน์	มหาวิทยาลัยรามคำแหง
3	อาจารย์ ดร.ศศิพัชร์ สันกลกิจ	มหาวิทยาลัยเทคโนโลยีราชมงคลล้านนา
4	ผู้ช่วยศาสตราจารย์ ดร.ทรงนคร การนา	มหาวิทยาลัยเทคโนโลยีราชมงคลศรีวิชัย
5	อาจารย์ ดร.เล็กฤทัย ขันทองชัย	มหาวิทยาลัยราชภัฏจันทรเกษม
6	รองศาสตราจารย์ ดร.เพ็ญศรี ศรีสวัสดิ์	มหาวิทยาลัยการกีฬาแห่งชาติ
7	ผู้ช่วยศาสตราจารย์ ดร.พงศ์ธนัช แซ่จู	มหาวิทยาลัยขอนแก่น
8	ผู้ช่วยศาสตราจารย์ ดร.กนกวรรณ เรืองศิริ	สถาบันเทคโนโลยีจิตรลดา

9	ผู้ช่วยศาสตราจารย์ ดร.พิชิต อ้วนไตร	มหาวิทยาลัยราชภัฏเทพสตรี
10	ผู้ช่วยศาสตราจารย์ ดร.จิรวัฒน์ สิตรานนท์	มหาวิทยาลัยเทคโนโลยีราชมงคลตะวันออก
11	อาจารย์ ดร.ทักษิณา เครือหงส์	มหาวิทยาลัยเทคโนโลยีราชมงคลสุวรรณภูมิ
12	รองศาสตราจารย์ ดร.ทรงเกียรติ ภัทรปัทมาวงศ์	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าธนบุรี
13	ผู้ช่วยศาสตราจารย์ ดร.จิรโรจน์ สามารถโชติพันธุ์	มหาวิทยาลัยเทคโนโลยีราชมงคลอีสาน วิทยาเขตขอนแก่น
14	ผู้ช่วยศาสตราจารย์ ดร.ธรัช อารีราษฎร์	มหาวิทยาลัยราชภัฏมหาสารคาม
15	รองศาสตราจารย์ ดร.ภัทราวดี มากมี	วิทยาลัยวิทยาการวิจัยและวิทยาการปัญญา มหาวิทยาลัยบูรพา
16	รองศาสตราจารย์ ดร.ทวิช พูลเงิน	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าธนบุรี
17	ผู้ช่วยศาสตราจารย์ ดร.อัจฉรีย์ พิมพิมูล	มหาวิทยาลัยราชภัฏอุบลราชธานี
18	ผู้ช่วยศาสตราจารย์ ดร.ทวีเดช ศิริธนาพิพัฒน์	มหาวิทยาลัยเกษตรศาสตร์
19	ผู้ช่วยศาสตราจารย์ ดร.ณชญาภัส เคาท์เทน	มหาวิทยาลัยเทคโนโลยีราชมงคลธัญบุรี
20	รองศาสตราจารย์ ดร.พินิจ เนื่องภิรมย์	มหาวิทยาลัยเทคโนโลยีราชมงคลล้านนา
21	รองศาสตราจารย์ ดร.ชัชพล ชังชู	มหาวิทยาลัยเกษตรศาสตร์
22	ผู้ช่วยศาสตราจารย์ ดร.ไกรลาศ ดอนชัย	มหาวิทยาลัยเทคโนโลยีราชมงคลล้านนา
23	ผู้ช่วยศาสตราจารย์ ดร.เสกสรร อามาตย์มนตรี	มหาวิทยาลัยสุโขทัยธรรมาธิราช
24	ผู้ช่วยศาสตราจารย์ ดร.ประเสริฐ แซ่เอี๊ยบ	มหาวิทยาลัยราชภัฏพระนคร
25	อาจารย์ ดร.ณัฐพงษ์ อินทรวิเศษ	มหาวิทยาลัยเทคโนโลยีราชมงคลล้านนา
26	ผู้ช่วยศาสตราจารย์ ดร.สิริสวัสดิ์ จึงเจริญนิรชร	มหาวิทยาลัยราชภัฏเทพสตรี
27	ผู้ช่วยศาสตราจารย์ ดร.ดร.มนตา ตุลย์เมธาการ	มหาวิทยาลัยศรีนครินทรวิโรฒ
28	รองศาสตราจารย์ ดร.ศิริโรจน์ ศิริสุขประเสริฐ	มหาวิทยาลัยเกษตรศาสตร์
29	อาจารย์ ดร.จริยา ชื่นศิริมงคล	คณะพยาบาลศาสตร์เกื้อการุณย์ มหาวิทยาลัยนวมินทราธิราช
30	อาจารย์ ดร.ณัฏฐ์ สิริวรรธนานนท์	มหาวิทยาลัยเทคโนโลยีราชมงคลสุวรรณภูมิ
31	ผู้ช่วยศาสตราจารย์ ดร.อนุศิษฏ์ อันมานะตระกูล	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าธนบุรี
32	ผู้ช่วยศาสตราจารย์ ยุพรัตน์ จันทร์แก้ว	มหาวิทยาลัยเทคโนโลยีราชมงคลล้านนาตาก
33	ผู้ช่วยศาสตราจารย์ ดร.ฐิตะพล หุยะนันท์	มหาวิทยาลัยเทคโนโลยีมหานคร
34	รองศาสตราจารย์ ดร.จารุณี ชามาตย์	มหาวิทยาลัยขอนแก่น
35	รองศาสตราจารย์ ดร.พรสวรรค์ วงค์ตาธรรม	มหาวิทยาลัยขอนแก่น
36	รองศาสตราจารย์ ทวีวัฒน์ สุภารส	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าธนบุรี
37	รองศาสตราจารย์ ดร.พีระวุฒิ สุวรรณจันทร์	สถาบันเทคโนโลยีพระจอมเกล้าเจ้าคุณทหารลาดกระบัง

38	รองศาสตราจารย์ ดร.จิตติรัตน์ แสงเลิศอุทัย	มหาวิทยาลัยราชภัฏนครปฐม
39	ผู้ช่วยศาสตราจารย์ ดร. สุจินต์ จิระชีวะนันท์	มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าธนบุรี
40	อาจารย์อภิวิชญ์ ทองรักษา	มหาวิทยาลัยเทคโนโลยีราชมงคลกรุงเทพ
41	ผู้ช่วยศาสตราจารย์ ดร.บุษราคัม ทองเพชร	มหาวิทยาลัยเทคโนโลยีราชมงคลศรีวิชัย
42	ผู้ช่วยศาสตราจารย์ ดร.ธิดารัตน์ กุลณัฐรวงศ์	มหาวิทยาลัยเทคโนโลยีราชมงคลธัญบุรี
43	ผู้ช่วยศาสตราจารย์ ดร.อาคม ลักษณะสกุล	มหาวิทยาลัยเทคโนโลยีราชมงคลศรีวิชัย
44	อาจารย์ ดร.เอกพิสิษฐ์ บรรจงเกลี้ยง	มหาวิทยาลัยราชภัฏอุตรดิตถ์

รายนามผู้สนับสนุนระดับ Platinum

สมาคมศิษย์เก่าครุศาสตร์อุตสาหกรรม มจพ.

คณะวิศวกรรมศาสตร์
มหาวิทยาลัยเทคโนโลยีราชมงคลล้านนา

ศูนย์วิจัยวิศวกรรมน้ำและโครงสร้างพื้นฐาน

การไฟฟ้าส่วนภูมิภาค (กฟภ.)

รายนามผู้สนับสนุนระดับ Platinum

บริษัท สโตนเฮ้นจ์ จำกัด

บริษัท ดีเคด คอนซัลแตนท์ จำกัด

บริษัท ทูเก็ตเตอร์ แอสโซซิเอทส์ จำกัด

บริษัท เอส ซี เอ็ม เทคโนโลจีส์ จำกัด

รายนามผู้สนับสนุนระดับ Gold

คณะครุศาสตร์อุตสาหกรรม
มหาวิทยาลัยเทคโนโลยีราชมงคลสุวรรณภูมิ

คณะครุศาสตร์อุตสาหกรรมและเทคโนโลยี
สถาบันเทคโนโลยีพระจอมเกล้า
เจ้าคุณทหารลาดกระบัง

องค์กรแห่งการเรียนรู้
คณะครุศาสตร์อุตสาหกรรมและเทคโนโลยี
สู่สากลและยั่งยืน

คณะครุศาสตร์อุตสาหกรรมและเทคโนโลยี
มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าธนบุรี

สถาบันการอาชีวศึกษาภาคตะวันออกเฉียงเหนือ 1

รายนามผู้สนับสนุนระดับ Gold

คณะครุศาสตร์อุตสาหกรรม
มหาวิทยาลัยเทคโนโลยีราชมงคลอีสาน วิทยาเขตขอนแก่น

คณะครุศาสตร์อุตสาหกรรม
มหาวิทยาลัยเทคโนโลยีราชมงคลอีสาน
วิทยาเขตขอนแก่น

บริษัท เอ็นแอล ดีเวลลอปเมนต์ จำกัด (มหาชน)

บริษัท เอส.เอ็ม.ซี. (ประเทศไทย) จำกัด

รายนามผู้สนับสนุนระดับ Silver

สถาบันการอาชีวศึกษาภาคกลาง 4

วิทยาลัยเทคโนโลยีสยาม (สยามเทค)

รายนามผู้ร่วมจัดงาน

สมาคมศิษย์เก่าครุศาสตร์อุตสาหกรรม มจพ.

คณะวิศวกรรมศาสตร์
มหาวิทยาลัยเทคโนโลยีราชมงคลล้านนา

ศูนย์วิจัยวิศวกรรมน้ำและโครงสร้างพื้นฐาน

สมาคมครุศาสตร์อุตสาหกรรม (ประเทศไทย)

คณะครุศาสตร์อุตสาหกรรม
มหาวิทยาลัยเทคโนโลยีราชมงคลสุวรรณภูมิ

คณะครุศาสตร์อุตสาหกรรมและเทคโนโลยี
สถาบันเทคโนโลยีพระจอมเกล้า
เจ้าคุณทหารลาดกระบัง

สถาบันการอาชีวศึกษาภาคกลาง 4

คณะครุศาสตร์อุตสาหกรรม
มหาวิทยาลัยเทคโนโลยีราชมงคลอีสาน
วิทยาเขตขอนแก่น

รายนามผู้ร่วมจัดงาน

การไฟฟ้าส่วนภูมิภาค (กฟภ.)

บริษัท ทูเก็ตเตอร์ แอสโซซิเอทส์ จำกัด

บริษัท เอ็นแอล ดีเวลลอปเมนต์ จำกัด (มหาชน)

คณะครุศาสตร์อุตสาหกรรมและเทคโนโลยี
มหาวิทยาลัยเทคโนโลยีราชมงคลศรีวิชัย จ.สงขลา

คณะครุศาสตร์อุตสาหกรรมและเทคโนโลยี
มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าธนบุรี

วารสารวิชาการครุศาสตร์อุตสาหกรรมและวิศวกรรมศึกษา

คณะครุศาสตร์อุตสาหกรรม มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ

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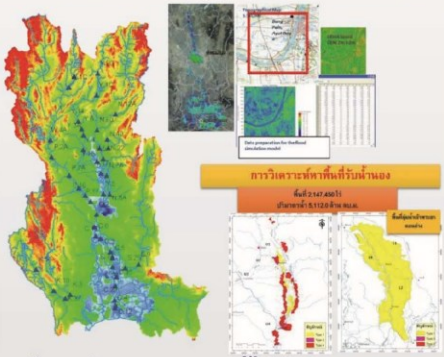

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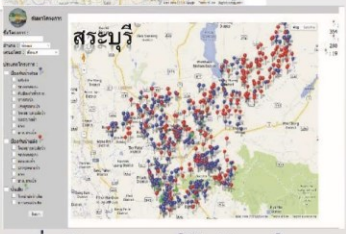

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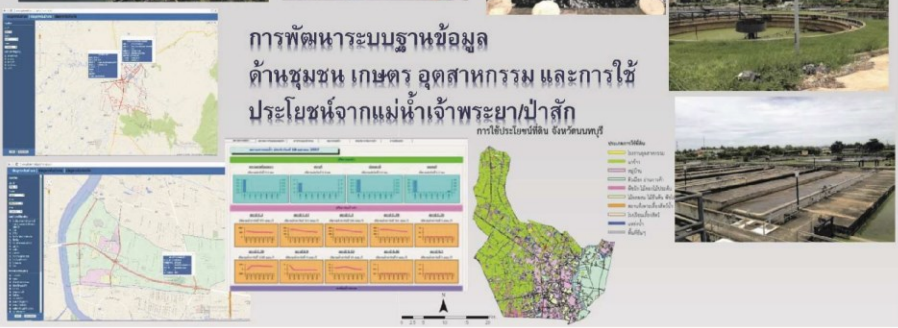

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รวมทั้งงานก่อสร้างสาธารณูปโภค และการติดตั้งงานระบบวิศวกรรมต่างๆ
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ด้วยประสบการณ์ ความรู้ความชำนาญและประสิทธิภาพในการบริหาร จัดการที่สั่งสมมากว่า 41 ปี
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จัดตั้งขึ้นเมื่อวันที่ 7 เมษายน 2536

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1. ประสานสามัคคี เกื้อกูลสนับสนุนให้หมู่สมาชิกเกี่ยวกับการประกอบอาชีพที่พึงปฏิบัติต่อสังคมที่ไม่ขัดต่อศีลธรรมและกฎหมายของบ้านเมือง
2. เสริมสร้างสัมพันธ์ที่ดีระหว่างศิษย์เก่า และศิษย์ปัจจุบันของคณะครุศาสตร์อุตสาหกรรม
3. เป็นศูนย์รวมการศึกษา ค้นคว้า และเป็นที่ปรึกษาทางด้านวิชาการแก่สมาชิกและบุคคล
4. เป็นศูนย์กลางเพื่อจัดหารายได้ สำหรับบำรุงคณะครุศาสตร์อุตสาหกรรม

ทั้งนี้ ไม่ดำเนินการใดๆ ที่เกี่ยวกับการเมือง การพนัน การหาผลกำไรมาแบ่งปันตลอดจนไม่ทำให้เสื่อมเสียศีลธรรม จารีตประเพณี และวัฒนธรรมอันดีงามของชาติ

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