KEMENTERIAN PENGAJIAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

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SULTAN SALAHUDDIN ABDUL AZIZ SHAH

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TVET EDUCATION: LEVERAGING THE FUTURE

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The Development of Skin Resistance Arduino-Based Module for Stress Monitoring

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ABSTRACT

Learning norms are now implemented either online or offline at any level of learning institution, whereby students are required to demonstrate continuous progress and skills in a variety of subjects. The need for students to adapt learning in this hybrid way allows for the construction of depression, anxiety, and stress. Before this, the DASS-42 scale was used to measure the level of depression, anxiety, and stress. Yet in line with the IR4.0 era, a tool needs to be developed to enable faster and more efficient detection. This study aims to develop a device that can detect user stress levels across a touchpad using an Arduino module and subsequently play audio that can reduce student stress levels. The developed prototype will detect stress levels based on the level of blood supply to the skin. Based on Ohm's Law which says that the voltage is directly proportional to the resistance, the value of the voltage will also increase as the resistance increases. Referring to this, it can be attributed that when students are in a state of stress, skin resistance will also increase. This situation increases the permeability of the skin and in turn its conductivity to electrical current. From the detection, the prototype Stress Meter can be used by students as a medium of self-assessment apart from using the DASS-42 self-report scale and facilitate in identifying and controlling the level of academic stress experienced by students. This can certainly improve the quality of life of a student.

Keywords: DASS-42, Stress detection, Skin resistance, Arduino.

1. INTRODUCTION

Stress is a term that refers to the sum of the physical, mental, and emotional strains or tensions on a person. Feelings of stress in humans result from interactions between persons and their environment that are perceived as straining or exceeding their adaptive capacities and threatening their well-being. The element of perception indicates that human stress responses reflect differences in personality as well as differences in physical strength or health. The World Health Organisation (WHO) defines stress as "the reaction people may have when presented with demands and pressures that are not matched to their knowledge and abilities and which challenge their ability to cope." It is not a disease. However, if stress is intense and goes on for some time, it can lead to mental and physical ill health for example, depression, nervous breakdown, heart disease, obesity etc.

According to American Psychological Association (APA), there are 3 different types stress — acute stress, episodic acute stress, and chronic stress. The 3 types of stress each have their own characteristics, symptoms, duration, and treatment approaches. Acute pressure is usually brief. It is a common and frequent stress among students especially. Acute stress is most often caused by reactive thinking. Negative thoughts dominate a situation or event that has recently occurred, or a situation, event or request that will come in the near future. For example, is the situation of students who may experience acute stress that is about the next assignment deadline and the addition of work at one time. However, often when the stress caused by thinking is reduced or removed, the stress will be reduced as well eventually.

Subsequently, the second type of stress that is episodic acute stress is common for people who regularly experience acute stress, or whose life is constantly triggered by stress. Individuals who frequently experience acute stress often live chaotic and crisis lives. They are always in a hurry or feel stressed. They carry a lot of responsibilities, and usually can't stay organized with so many times demands. These

individuals are always in the grip of an acute stress load. This type of pressure is heavier than normal acute pressure.

The third type of stress which is chronic stress is the most dangerous type of stress. If chronic stress is not treated for a long period of time, it can significantly damage your physical health and is often irreversible as well as worsen your mental health. For example, long-term poverty, repeated abuse in any form, unemployment, dysfunctional families, poor work environments, substance abuse or unhappy marriages can cause significant chronic stress. Chronic stress can also occur when an individual feels hopeless, unable to escape the source of stress, and desperate to find a solution. Chronic stress can also cause by unpleasant experiences in childhood or traumatic experiences later in life.

2. LITERATURE REVIEW

The skin is the outer covering of the body. In humans, it is the largest organ of the integumentary system made up of multiple layers of ectodermal tissue, and guards the underlying muscles, bones, ligaments and internal organs. Human skin is similar to that of most other mammals except that it is not protected by a pelt and appears hairless though in fact nearly all human skin is covered with hair follicles. There are two general types of skin, hairy and smooth skin. Skin offers some resistance to current and voltage. At relaxed state skin offer more resistance and at higher stress they offer less resistance. This resistance changes with the emotional state of the body. Though this is barely perceptible, the electrodes register the change that is detected by LM3914 for which the LED dot oscillates up and down in this way the stress meter detects the stress.

Skin is composed of three primary layers:
  i- The epidermis, which provides waterproofing and serves as a barrier to infection.
  ii- The dermis, which serves as a location for the appendages of skin.
  iii- The hypodermis (subcutaneous adipose layer)
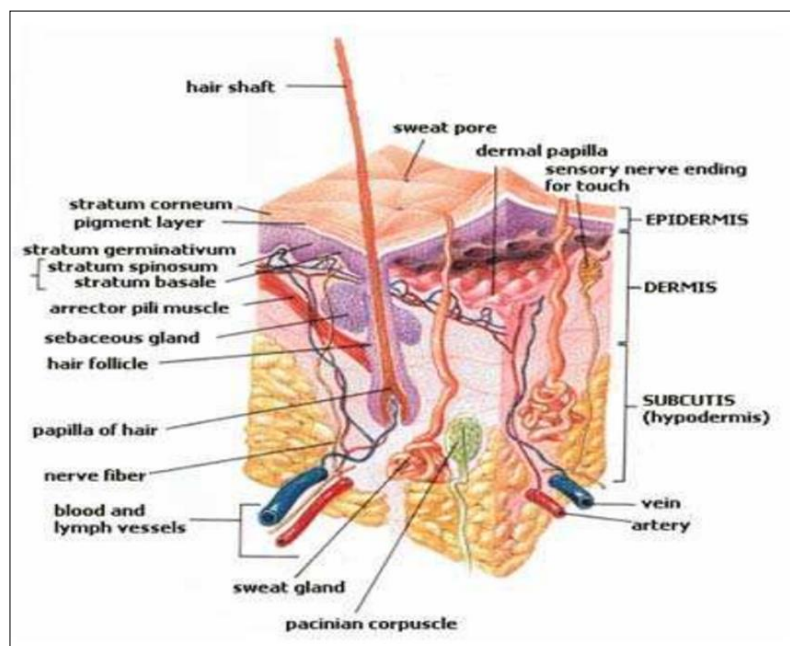This are illustrated as figure below.

Figure 1: Structure of human skin (Reprinted with permission from59. © 1999 McGraw-Hill.)

In this project the stress of a person can be determined by sensing the skin resistance and muscle strength of that person. Two probes are used to sense the grip of that person. Skin resistance changes the emotional state of the body. The grip of the person that is applied on the probe leads the LEDs to glow accordingly from bar1 to bar10. Hence the stress levels of that person can be determined by the oscillations of the LED dot up and down. This resistance changes with the emotional state of the body (Pranathi, 2010). Though this is barely perceptible, the electrodes register the change that is detected by LM3914 for which the LED dot oscillates up and down in this way the stress meter detects the stress. Stress meter using skin resistance and muscle strength is a basic model to determine the stress of a person. This device can be

further developed to design equipment like lie detectors; skin response meters; skin resistance meters; fitness meters; grip scopes etc. Therefore, this project can be further developed to be use in medical field, forensic department and it even helps in improving the body fitness.

3. PROBLEM STATEMENT

Students in secondary and tertiary education settings face a wide range of ongoing normative stressors, which can be defined as normal day to day hassles such as ongoing academic demands. Accordingly, secondary students defined here as students in their secondary education and tertiary students which defined here as post-secondary education (UNESCO, 2012) students commonly self-report experiencing ongoing stress relating to their education, which be refer to as academic-related stress, such as concerns about receiving poor grades that resulting pressure to achieve high marks.

In a study conducted (Perveen Asma et al, 2020) was able to identify the prevalence of stress, anxiety and depression among Malaysian adults and students at an IPTA. Stress is a global issue that to date is still discussed by researchers around the world. Stress-related studies also continue to receive attention from researchers in Malaysia. This is because stress can cause some adverse effects to the individual who experiences it such as affecting relationships with supervisors, peers and family members and producing behaviours that can affect image and harmony in an institution such as oppressing others. Individuals who experience stress also show lower academic performance compared to individuals who are able to control stress within themselves. A cross-sectional study was conducted on 506 students between the ages of 18 and 24 years from four public universities in the Klang Valley, Malaysia. Analysis showed among all students, 139.15% student had moderate, and 49% had severe or extremely severe depression; 172% had moderate, and 146.74% had severe or extremely severe anxiety; and 94.12% had moderate and 25.80% had severe or extremely severe stress scores based on the DASS-21 inventory (Shamsuddin, 2013).

The Royal Malaysian Police (PDRM) recorded 631 suicide cases during 2020 and 468 cases in the period from January to May 2021. For 2019, a total of 609 suicides were recorded and an average of two suicides occurred daily from 2019 to May 2021. Bukit Aman Criminal Investigation Department director, Datuk Seri Abd Jalil Hassan, said during the period 2019 to May 2021, a total of 281 men and 1,427 women were reported to have committed suicide. "Most of the victims involved are between 15 to 22 years old, which is a total of 872 people and for the victims aged between 19 to 40 years old is a total of 668 people. He also reported that Johor recorded the highest number of cases in 2019 and 2020 which was 101 cases while Selangor recorded the highest number of cases from January 2021 to May 2021 which was 117 cases. The three main causes of suicide were the victims facing family problems, emotional and financial stress.

This shows how great the impact of stress on teenagers. Therefore, there is a need for a way to detect stress among students so that they avoid getting uncontrollable chronic stress.

4. RESEARCH OBJECTIVES

i. To develop an Arduino-based module device that can detect skin resistance through voltage variations across the touch pad to be interpret as stress level.
ii. To reduce the level of stress detected by playing selected audio.

4.1 Scope of the research

In this study, the develop stress meter only coping to reduce acute stress only. This is due to the APA standard that state acute stress is the most suitable to be associated with students who are stressed due to too much work to be completed and a short period of time. So, this project allows students to know the level of acute stress in certain range. The LED bar graph were divided to 10 level of voltage varieties with an increment of 120mV at each level. Upon detection above three bar graphs, the Skin Resistance Arduino-Based Module will play selected audio to reduce the stress.

This stress meter can detect the level of stress through skin resistance between the ages of 20 to 30 because at this age range the skin easily shows strong sensitivity. The project will be tested on the most stressed students to find out their respective stress levels and the number of students to be tested is limit to 15 students from DEP4C and DEP4A class.

5. METHODOLOGY

The study began by developing a prototype to detect resistance on the skin. There are two parts to a prototype, hardware and software. As for the hardware, the designed controller uses a closed loop system with Arduino as the main controller. The controller circuit using Arduino was designed using Proteus 8.4 software and then converted to a PCB circuit. Each LED in the strain meter operates with a 3db difference from the previous one, and jumpers are provided to allow detection in bar mode. This project is an important part of the expandable analyzer and one meter circuit is used for each frequency band. There are many other uses for a simple LED meter. It is suitable as a power meter on amplifiers, can be used with (mixers including high quality mixers) preamps and any other application where it is important to know the signal level. The 3db/step display on the LM3915 is suitable for signals with a wide dynamic range, such as audio level, power, light intensity or vibration. By replacing conventional meters with LED bar graphs, response test result can be displayed faster. This LED bar graph is more ruggedly with high visibility that maintains the ease of interpretation of analogue displays.

The Blood Pressure (BP) level of volunteers was examined by inflating a cuff in line with the heart, around the fore-arm to verify the stress test. The BP was concluded to be normal if it was less than the value of (135/85) and high otherwise. Reducing stress decreases high BP (Villarejo, 2013). The volunteers were asked to relax for two minutes and then asked to finish mathematic calculation in ten minutes or faster.

5.1 Operation

The prototype circuit starts working when a sensor on the touchpad detects skin resistance. The resistance is then analyzed by the Arduino Uno and interpreted by a transistor that sends a signal to the LM3915. Next, the LM3915 can detect the voltage value obtained from the input pin 5 of the transistor and send that value to the LED bar graph. This will indicate the level of pain produced from the galvanic skin response. If the pressure level past the third bar is detected, audio will be played.
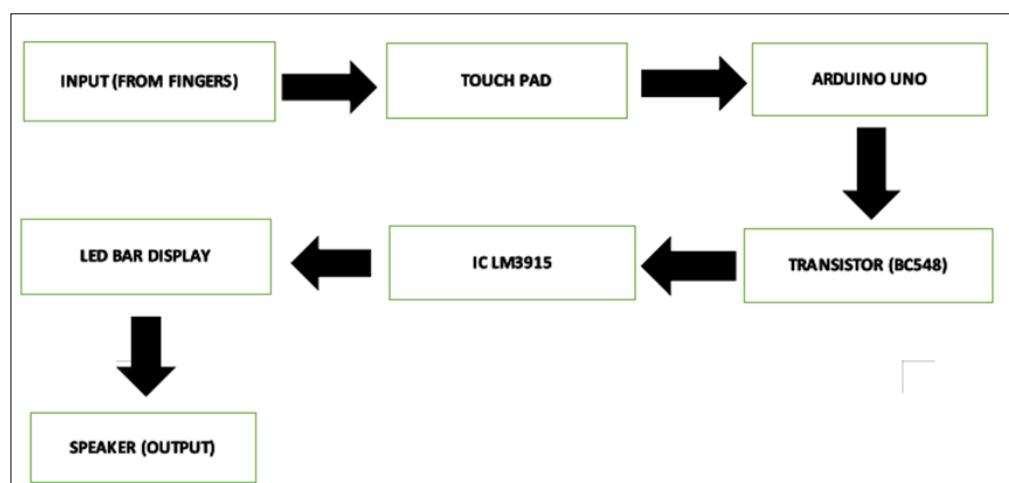

Figure 2: Block Diagram of Skin Resistance Arduino-Based Module for Stress Monitoring Operation

5.2 Developing the circuit

This stress monitor lets assess level of stress. If the stress is very high, it gives visual indication through a light emitting diode LED display along with warning beep. The gadget is small enough to be worn around the wrist. The LM3915 is a monolithic integrated circuit that senses analogue voltage levels and drives ten LED's, LCD's or vacuum fluorescent displays, providing a logarithmic 3db/step analogue display. The gadget is based on the principle that the resistance of the skin varies in accordance with emotional states. If the stress level is high the skin offers less resistance, and if the body is related the skin resistance is high (A Sugathan, 2013). During high stress, the blood supply to the skin will increase. This increases the permeability of the skin and hence the conductivity for electric current. Hence, this property of the skin is used to measure the stress level, whereby the touch pads of the stress meter sense the voltage

variations across the touch pads and convey the same to the circuit. The circuit is very sensitive and able to detects even a minute voltage variation across the touch pads. When the LED bar is lit at maximum level, the micro-controller will give instructions to play selected audio through speakers connected to the circuit. This is because this project not only detect the stress level but it will also "be suggesting" a way to reduce the stress through pre -compiled audio.
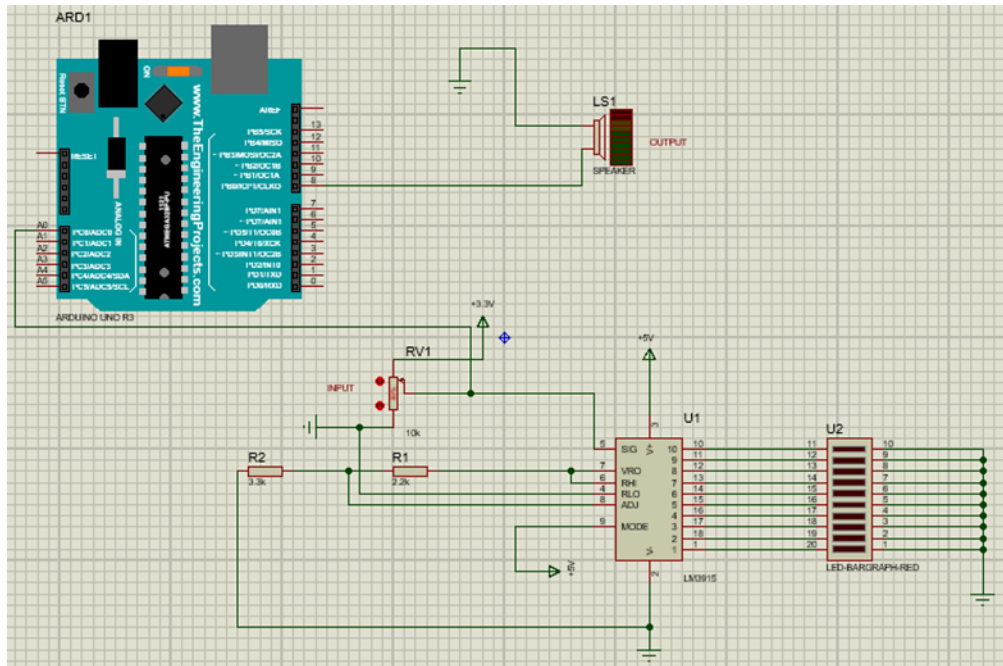
Figure 3: Schematic circuit of Stress Monitoring design using Proteus

A person's skin acts as a resistance to the passage of electrical current. By placing two electrodes on the fingers, the skin resistance can be calculated as

$$Vo = \frac{R2}{Rs + R2} Vcc$$

Which Rs is the value for skin resistance. Showed Figure 4, the voltage divider that been form when the resistance is series with the skin resistance.
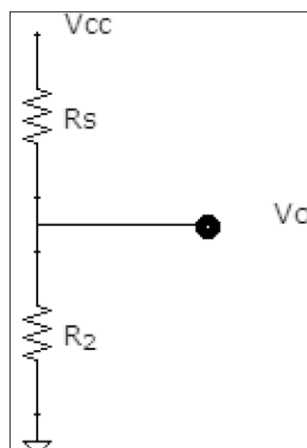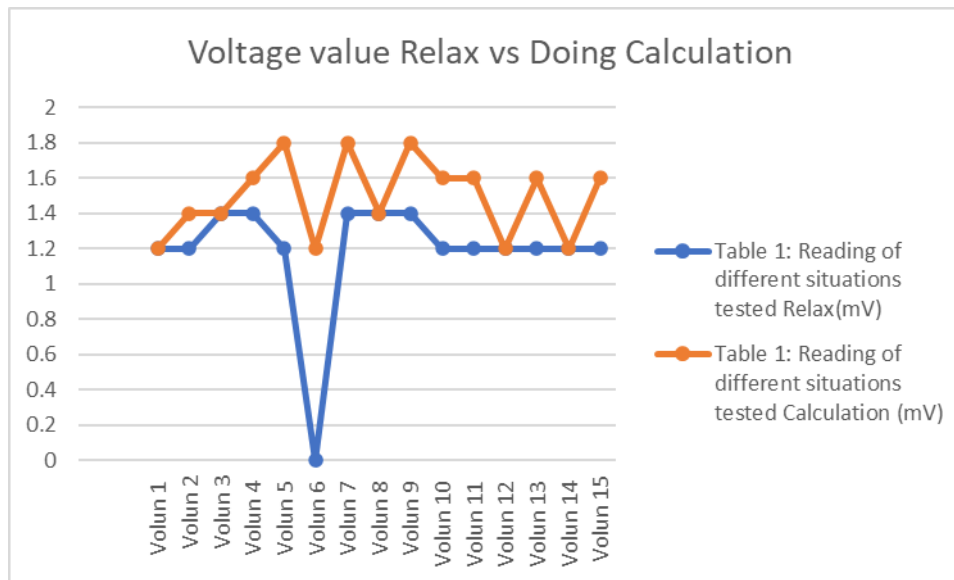

Figure 4: Voltage Divider

5. RESULT

All the volunteers have to undergo the following situations:
   i-   Staying relaxed for two minutes
   ii-   Doing mathematical quiz in ten minutes

The results were observed whether the LED graph bar light more than three level after doing those activities.

The result shows all the volunteers successfully finished the task given. The result also shows that four reading obtained were not affected by the test situation. While the other participants showing the increasing of the LED bar graphs level. This partially prove that the designed protype able to detect skin resistance in different situations. It also includes an initial threshold between being stressed and being relaxed. However, the audio that should lower the stress level did not operate properly resulting the stress level maintain at the detected level.

6. CONCLUSION

The stress meter has successfully detected whether there is an effort or a situation different from relaxing with a success rate. It was observed that the participants who had done several trials before, obtained the highest difference; the average can be higher if the user gets used to the device. The next stage is to design an algorithm to detect the difference between different emotional situations such as being depressed or doing work.

ACKNOWLEDGEMENT

REFERENCES

A Perveen, H Hamzah, F Ramlee, A Othman, M Minhad, 2020. Mental health and coping response among Malaysian adults during COVID-19 pandemic movement control order. Journal of Critical Reviews 7 (18), 653-660

A. Sugathan, G. G. Roy, G. J. Kirthyvijay and J. Thomson, "Application of arduino based platform for wearable health monitoring system," 2013 IEEE 1st International Conference on Condition Assessment Techniques in Electrical Systems (CATCON), 2013, pp. 1-5, doi: 10.1109/CATCON.2013.6737464.

Ballegaard S, Petersen PB, Gyntelberg F, Faber J. 2012.The association between pressure pain sensitivity, and answers to questionnaires estimating psychological stress level in the workplace. A feasibility studies. Scand J Clin Lab Invest 2012 Oct;72(6):459-66

Daniela Gasperin, Gopalakrishnan Netuveli, Juvenal Soares Dias-dacosta, Marcos Pascoal Pattussi. 2009. Effect of psychological stress on blood pressure increase: a Meta analysis of cohort studies. Cad.saudepublica, Rio de Janeiro, pp.715-726.

D. Mohan Kumar.June 2009. Skin Response Meter. Electronics for You Magazine. Vol 41, no 6, pp. 88. Patrick A. Boudewyns. 1976. A comparison of the effects of stress vs. relaxation instruction on the finger temperature response, Elsevier, pp. 54-67

Macneil, Sheila. 2008. Biomaterials for tissue engineering of skin. Materials Today. 11. 10.1016/S1369-7021(08)70087-7.

Reddy K. J, Menon K. R, Thattil A. 2018.Academic Stress and its Sources Among University Students. Biomed Pharmacol J 2018;11(1).

Richard C Jaegar and Travis N Blalock. 2008.Micro electronic circuit design, Third Errata

Shamsuddin K, Fadzil F, Ismail WS, Shah SA, Omar K, Muhammad NA, Jaffar A, Ismail A, Mahadevan R. Correlates of depression, anxiety and stress among Malaysian university students. Asian J Psychiatr. 2013 Aug;6(4):318-23. doi: 10.1016/j.ajp.2013.01.014. Epub 2013 Mar 1. PMID: 23810140.

UNESCO. 2012. International standard classification of education (ISCED) 2011. Montreal, Quebec

Villarejo, M.V.; Zapirain, B.G.; Zorrilla, A.M. A Stress Sensor Based on Galvanic Skin Response (GSR) Controlled by ZigBee. Sensors 2012, 12, 6075-6101. https://doi.org/10.3390/s120506075

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BUKU PROGRAM

CIE-TVET 2022

VIRTUAL CONFERENCE

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IN TECHNICAL EDUCATION & VOCATIONAL TRAINING 2022

5-6 SEPTEMBER 2022
POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

ISI KANDUNGAN

KATA ALU-ALUAN
TIMBALAN KETUA PENGARAH (PERANCANGAN)

Assalamualaikum Warahmatullahi Wabarakatuh, Salam Sejahtera dan Salam Keluarga Malaysia.

Setinggi-tinggi kesyukuran kepada Allah S.W.T kerana dengan limpah *kurniaNya 12th National Conference in Technical Education and Vocational Training* (CiE-TVET) *2022* dapat dilaksanakan dengan jayanya.

Sekalung tahniah diucapkan kepada seluruh warga Politeknik Sultan Salahuddin Abdul Aziz Shah serta jawatankuasa yang bertungkus lumus bagi menjayakan CiE-TVET 2022 sehinggalah mencapai kemuncaknya pada hari ini. Syabas dan tahniah juga diucapkan kepada para peserta seminar CiE-TVET 2022. Perkongsian ilmu dalam kalangan para penyelidik amat diperlukan agar bidang pendidikan dan penyelidikan Negara sentiasa ke hadapan.

Sejajar dengan kemajuan teknologi IR4.0, tenaga pengajar bertanggungjawab mengembangkan minat, bakat dan kebolehan pelajar. Mereka harus bersikap peka dan responsif kepada sebarang bentuk perubahan teknologi dalam industri agar tidak ketinggalan zaman apabila berhadapan dengan para pelajar.

Justeru, CiE-TVET 2022 kali ini dilihat sebagai salah satu platform bagi para penyelidik untuk bertemu dan saling berkongsi hasil penyelidikan di antara satu sama lain. Perkongsian sebegini juga dapat meningkatkan kualiti keilmuan dalam kalangan ahli akademik seraya menyemai pembudayaan aktiviti penyelidikan di intitusi pengajian tinggi terutamanya di Politeknik dan Kolej Komuniti Malaysia. Ini seterusnya meletakkan Politeknik dan Kolej Komuniti ke persada kecemerlangan dan menjadi peneraju TVET negara yang unggul dan disegani.

Sekian, terima kasih.

YBrs. Dr ZUBAIDAH BINTI AMAN
TIMBALAN KETUA PENGARAH (PERANCANGAN)
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

KATA ALU-ALUAN
PENGARAH PUSAT PENYELIDIKAN DAN INOVASI

Salam Sejahtera dan Salam Keluarga Malaysia.

Terlebih dahulu syabas saya ucapkan kepada warga Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) serta seluruh jawatankuasa yang terlibat atas komitmen dalam menjayakan penganjuranl *12th National Conference In Education-Technical and Vocational Education and Training* (Cie-TVET 2022).

Syabas dan tahniah saya ucapkan kepada pembentang dan peserta seminar Cie-TVET 2022 kali ke -12. Saya percaya dengan adanya seminar seperti ini, kita dapat terus menyemarakkan semangat penyelidikan dalam kalangan warga JPPKK untuk lebih produktif di samping menggilap bakat penulis baharu. Tidak lupa juga saya ingin merakamkan penghargaan dan ucapan tahniah kepada semua ahli jawatakuasa seminar kali ini.

Agenda pemerkasaan Pendidikan Teknikal dan Latihan Vokasional (TVET) yang didukung Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK) adalah selaras dengan hasrat negara dalam membangunkan aktiviti ekonomi berasaskan pengetahuan dan inovasi dengan melahirkan graduan TVET berkualiti. Oleh itu, perkongsian ilmu perlu diberi penekanan bagi memastikan ia sentiasa relevan, kini dan pada masa hadapan. Dapat saya simpulkan bahawa penganjuran seminar ini berjaya bertindak sebagai medium ilmu yang dipertanggungjawabkan untuk menyebarkan hasil kajian penyelidik.

Akhir kata, setinggi-tinggi ucapan tahniah dan terima kasih atas komitmen dan kerjasama yang diberikan kepada warga Politeknik Sultan Salahuddin Abdul Aziz Shah untuk penganjuran pada seminar Cie-TVET 2022 pada tahun ini. Diharap hasil penganjuran seminar kali ini dapat meningkatkan pengetahuan dan menjadi pemangkin ke arah kecemerlangan pendidikan TVET serta bakal mencorak aliran pendidikan yang lebih berkualiti di masa akan datang.
Sekian, terima kasih.

YBrs. DR. RIAM A/P CHAU MAI
PENGARAH,
PUSAT PENYELIDIKAN DAN INOVASI,
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

KATA ALU-ALUAN
PENGARAH POLITEKNIK SULTAN SALAHUDDIN
ABDUL AZIZ SHAH

Assalamualaikum Warahmatullahi Wabarakatuh, Salam Sejahtera dan Salam Keluarga Malaysia.

Alhamdulilah terlebih dahulu syukur ke hadrat Allah S.W.T. atas kurnia-Nya dan keizinan-Nya CiE-TVET 2022 berjaya dilaksanakan. Terima kasih kerana memberi kepercayaan kepada Politeknik Sultan Salahuddin Abdul Aziz Shah bagi menganjurkan seminar kali ini.

Tema "TVET Education: Leveraging the Future" yang bermaksud pendidikan TVET adalah satu pelaburan untuk masa hadapan yang dipilih sangat signifikan dan bertepatan dengan usaha kerajaan untuk memperkasakan TVET. Kelayakan pendidikan yang tinggi bagi menyokong pembangunan pengetahuan dan inovasi, tahap kemahiran yang tinggi dalam bidang teknikal dan profesional, serta paras produktiviti yang tinggi adalah ciri utama modal insan dan tenaga kerja negara berpendapatan tinggi.

Seminar ini turut memberi penghargaan kepada semua pembentang dan penyelidik yang terlibat secara langsung dan tidak langsung. Syabas dan tahniah kepada semua peserta yang banyak memberi sumbangan dalam bidang penyelidikan. Saya berharap seminar ini menjadi pemacu untuk pensyarah, staf dan pelajar untuk berkongsi ilmu pengetahuan bagi meningkatkan nilai kepakaran dalam bidang dan melatih pensyarah, staf dan pelajar untuk berfikir secara kreatif dan kritis bagi mencetus transformasi berkesan.

Setinggi-tinggi penghargaan juga diucapkan kepada semua pihak terutama ahli jawatankuasa yang bertungkus-lumus menjayakan *National Conference In Education-Technical And Vocational Education And Training 2022* kali ke-12 ini. Akhir kata, semoga seminar seumpama ini diteruskan dan dijadikan platform kepada warga Politeknik dan Kolej Komuniti untuk terus bersama-sama membudayakan penyelidikan.

Sekian, terima kasih.

YBrs. Dr. HJ. MOHD ZAHARI BIN ISMAIL
PENGARAH
POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

3

ATURCARA MAJLIS PENUTUP

TEMPAT: DEWAN AL-JAZARI, PSA

6 SEPTEMBER 2022 (SELASA)

MASA	PERKARA
2.00 petang	Ketibaan Jemputan
2.15 petang	Ketibaan YBrs. Dr. Zubaidah binti Aman Timbalan Pengarah (Perancangan) Jabatan Pendidikan Politeknik dan Kolej Komuniti
2.30 petang	Nyanyian Lagu Negaraku
	Tayangan Video Keselamatan
	Ucapan Alu-Aluan oleh YBrs. Dr. Haji Mohd Zahari bin Ismail Pengarah Politeknik Sultan Salahuddin Abdul Aziz Shah
	Ucapan Penutupan oleh YBrs. Dr. Zubaidah binti Aman Timbalan Pengarah (Perancangan) Jabatan Pendidikan Politeknik dan Kolej Komuniti
3.00 petang	*Keynote Speaker* : Prof. Ts. Dr. Uda Hashim Pengarah Institute of Nano Electric Engineering (INEE) Universiti Malaysia Perlis (UniMAP)
3.40 petang	Ulasan Ketua Reviewer: Dr Hj. Zunuwanas bin Mohamad Pensyarah Utama Politeknik Sultan Salahuddin Abdul Aziz Shah
3.50 petang	Penyampaian Anugerah Pembentang/ Penyelidikan Terbaik
4.00 petang	Penyampaian Cenderahati
4.15 petang	Sesi Bergambar
4.25 petang	Nyanyian Lagu Politeknik & Kolej Komuniti
4.30 petang	Minum Petang Bersurai
3.40 petang	Ulasan Ketua Reviewer: Dr Hj. Zunuwanas bin Mohamad Pensyarah Utama Politeknik Sultan Salahuddin Abdul Aziz Shah

JADUAL PEMBENTANGAN CiE-TVET 2022

BILIK 1

MODERATOR : NURUL AKMAR BINTI KAMARUDDIN

JURI 1 : DR. AHMAD AZLAN BIN AB AZIZ

JURI 2 : DR. SABARIAH BINTI BOHANUDIN

PIC BILIK : SARIMAH BINTI CHE HASSAN

SESI 1
TARIKH: 5/9/2022 (ISNIN)
MASA: 9.00 PAGI – 12.00 TENGAHARI

NO	PAPER ID	TAJUK	NAMA PEMBENTANG	INSTITUSI
1	CIE-TVET 2022-0001	PENGUMPULAN TERMA TENAGA SOLAR BAGI KITARAN RANKINE ORGANIK (ORK)	MUHAMAD ASRUL AFFENDI MAT NOR FARAH WAHEDA BINTI OTHMAN ZULKURNAIN BIN HASSAN	KK PASIR SALAK KK PASIR SALAK POLITEKNIK PORT DICKSON
2	CIE-TVET 2022-0017	MENINGKATKAN KEMAHIRAN MENGUASAI KURSUS APLIKASI KOMPUTER MENGGUNAKAN PENDEKATAN SAMPUL MISTERI	EMARIA AHMAD ABDUL RAHMAN BIN MORNI	KK KUCHING KK SARIKEI
3	CIE-TVET 2022-0020	GROWTH PERFORMANCE OF THREE PURPLE SWEET POTATO VARIETIES	SITI NURJIAH ABDULLAH	POLITEKNIK JELI
4	CIE-TVET 2022-0048	IOT BASED HOME AUTOMATION AND APPLIANCES CONTROL	MOHAMAD FAIZ BIN JAMALUDIN	PSIS

BILIK 2

MODERATOR : SALIZAHANIM BINTI LEMAN

JURI 1 : DR. AZIAM BINTI MUSTAFA

JURI 2 : DR. MOHAMAD SIRI BIN MUSLIMIN

PIC BILIK : HARYANTI BT ABDULLAH

SESI 1
TARIKH: 5/9/2022 (ISNIN)
MASA: 9.00 PAGI – 12.00 TENGAHARI

NO	PAPER ID	TAJUK	NAMA PEMBENTANG	INSTITUSI
1	CIE-TVET 2022-0002	THE IMPACT OF PERCEIVED USEFULNESS, PERCEIVED EASE OF USE, PERCEIVED VALUE AND PERCEIVED RISK ON PURCHASE INTENTION VIA HYPERMARKET DRIVE-THRU AMONG KLANG VALLEY CONSUMERS	PUSHPALATHA APPANAIDU	PSA
2	CIE-TVET 2022-0004	MALAYSIAN SHOPPERS' BEHAVIOR IN E-TAILING	DR. NOORDINI ABDULLAH ROSAMIZA BINTI MEOR RAZAK DR. PARAMESWARI SHUNMUGAM	PSA
3	CIE-TVET 2022-0043	THE IMPACT OF ATTITUDE, AWARENESS, RELIGIOSITY AND KNOWLEDGE ON HIBAH PURCHASE INTENTION AMONG MUSLIM COMMUNITY IN HIGHER LEARNING INSTITUTIONS	DR AZIAM MUSTAFA SITI RAWAIDAH BINTI MOHD RAZIKIN ZAKIAH OTHMAN NOR LAILA HASSAN	PSA
4	CIE-TVET 2022-0057	IDENTIFICATION OF READING IMPAIRMENTS AMONG TVET STUDENTS	DR. PARAMESWARI SHUNMUGAM VIJAYAKUMAR VENGADASALAM	PSA MULTIMEDIA UNIVERSITY
5	CIE-TVET 2022-0059	DEVELOPMENT OF PORTABLE MUSCLE THERAPY FOR SKELETAL MUSCLE INJURY	TS ASMIRA BIN ASHARI YAAKUB BIN OMAR	PSA

JADUAL PEMBENTANGAN CiE-TVET 2022

BILIK 3

MODERATOR : NORANIZAH BINTI SARBANI

JURI 1 : DR. MARLINA BINTI RAMLI

JURI 2 : TS. DR. KANNAN RASSIAH

PIC BILIK : INTAN SYAFIQAH BINTI MOHD SHAH

SESI 1
TARIKH: 5/9/2022 (ISNIN)
MASA: 9.00 – 12.00 TENGAHARI

NO	PAPER ID	TAJUK	NAMA PEMBENTANG	INSTITUSI
1	CIE-TVET 2022-0003	KAJIAN KOMPOSISI DAN PENGASINGAN SISA PEPEJAL DI INDERA MAHKOTA 16, KUANTAN	TEE LIAN YONG NORRIZAH BINTI ABD WAHAB MUHAMAD FIRDAUS BIN CHE AMAT.	POLISAS
2	CIE-TVET 2022-0007	FLEXIBLE SHORING	AIDALIA ENDUT HALIZA BINTI AB KARIM NUR HANANI BINTI DAUD	POLISAS
3	CIE-TVET 2022-0039	PENILAIAN TAHAP KESELESAAN TERMAL DI HOSPITAL KERAJAAN	MUHAMAD ZAKWAN BIN ZAKARIAH NORSYAHIDA BINTI ZAKARIA NURHIDAYU BINTI AZHARI	PKS
4	CIE-TVET 2022-0055	ECO BATHROOM FLOOR DRYER	TS. ZURENA BINTI LEMEN ISMA AFIZA BINTI ISMAIL	PSA
5	CIE-TVET 2022-0008	ECO RUBBER PAVER	AIDALIA BINTI ENDUT NURUL IZZA BINTI ABD GHANI	POLISAS

JADUAL PEMBENTANGAN CiE-TVET 2022

BILIK 4

MODERATOR : DIANA BINTI NASARUDDIN

JURI 1 : DR. ZAINATULIZA BINTI ZAINAL ABIDIN

JURI 2 : DR. YUSRIZAL SUFARDI BIN MOHD YUNAN

PIC BILIK : SITI AISHAH BINTI AB JALIL

SESI 1
TARIKH: 5/9/2022 (ISNIN)
MASA: 9.00 – 12.00 TENGAHARI

NO	PAPER ID	TAJUK	NAMA PEMBENTANG	INSTITUSI
1	CIE-TVET 2022-0014	POLITEKNIK MERSING STUDENT'S SCORES IN THE TOEICÂ® LISTENING AND READING TEST	NORHASLINDA BINTI MUHAMADIN ADLEENA ADHA BINTI ABDUL MUA'AIN BAIZURA HASNI	POLITEKNIK MERSING POLITEKNIK TUN SYED NASIR SYED ISMAIL POLITEKNIK MERSING
2	CIE-TVET 2022-0023	TAHAP KEPUASAN DAN PERSEPSI PELAJAR POLITEKNIK SULTAN AZLAN SHAH TERHADAP PEMBELAJARAN DALAM TALIAN	HAFIZA IBRAHIM SITI NOOR OTHMAN AZIA IDAYU AWANG	POLITEKNIK SULTAN AZLAN SHAH
3	CIE-TVET 2022-0016	KAJIAN KEPUASAN PELAJAR KOLEJ KOMUNITI KUCHING TERHADAP MUZIUM BUDAYA BORNEO SEBAGAI TEMPAT PEMBELAJARAN DIGITAL	EMARIA BINTI AHMAD ABDUL RAHMAN BIN MORNI	KOLEJ KOMUNITI KUCHING, SARAWAK. KOLEJ KOMUNITI SARIKEI, SARAWAK.
4	CIE-TVET 2022-0022	KECENDERUNGAN PELAJAR KHAS BERMASALAH PENDENGARAN DALAM MEMILIH PENGAJIAN BIDANG TVET DI INSTITUSI PENGAJIAN TINGGI MALAYSIA	THENMOLY RAMACHANTHIRAN SITI KHALIJAH JAMAL NURUS SADIQIN ABDUL RAZAK KHAN NURUL AINI MOHD AHYAN	UTM PSA PSA UTM
5	CIE-TVET 2022-0024	HUBUNGAN ANTARA TAHAP KEPUASAN DAN PERSEPSI PELAJAR POLITEKNIK SULTAN AZLAN SHAH TERHADAP NORMA PEMBELAJARAN DALAM TALIAN	AZIA IDAYU AWANG SITI NOOR OTHMAN HAFIZA IBRAHIM	PSAS

JADUAL PEMBENTANGAN CiE-TVET 2022

BILIK 5

MODERATOR : NOOR HAYATI BINTI MAT TAIB

JURI 1   : DR. SITI ANIZAH BINTI MUHAMED

JURI 2   : DR. FAZIDA BINTI ADLAN

PIC BILIK   : SITI RAWAIDAH BINTI MOHD RAZIKIN

SESI 1
TARIKH: 5/9/2022 (ISNIN)
MASA: 2.00 – 5.00 TENGAHARI

NO	PAPER ID	TAJUK	NAMA PEMBENTANG	INSTITUSI
1	CIE-TVET 2022-0037	REKABENTUK ALAT PEMOTONG MUDAH ALIH SERBAGUNA	DR. MOHD ELIAS DAUD	PSA
2	CIE-TVET 2022-0030	PERKEMBANGAN PERKHIDMATAN DIGITAL PERPUSTAKAAN: ISU DAN CABARAN DI PERPUSTAKAAN IBNU KHALDUN	SITI ZUBAIDAH AHMAD NORHAYATI MAJID DR. AINUL HAEZAH NORUZMAN	PSA
3	CIE-TVET 2022-0044	KEBOLEHGUNAAN DAN KESAN APLIKASI MUDAH ALIH (MOBILE APPS) DALAM MENGESAN KEDUDUKAN MOTOSIKAL	NORMILA BINTI MOKHTAR SHAHIDA BINTI YUSOF YOGADEVI SUPRAMANIAM	PSAS
4	CIE-TVET 2022-0046	PERSEPSI PERMAINAN CROWD PAIR CARD DALAM PENGAJARAN DAN PEMBELAJARAN	NONI LELA HAYATI BINTI AYOB DEK AFIFA BINTI NORDAN NUR SYAMSINA BINTI AB AZIZ	PMM

BILIK 6

MODERATOR : NAAGAJOOTHI A/P ADIN NARAINA

JURI 1   : DR. NORZIANIS BINTI REZALI@ABDUL SUKOR

JURI 2   : DR. NORAZWA BINTI AHMAD ZOLKIFLI

PIC BILIK   : SURIA BINTI MD YUSOF

SESI II
TARIKH: 5/9/2022 (ISNIN)
MASA: 2.00 – 5.00 PETANG

NO	PAPER ID	TAJUK	NAMA PEMBENTANG	INSTITUSI
1	CIE-TVET 2022-0033	KEBERKESANAN PENGGUNAAN APPVIDS 1.0 SEBAGAI ALAT BANTU MENGAJAR BAGI KURSUS DYA 30083: BASIC ROBOTIC & AUTOMATION IN AGRICULTURE DI POLITEKNIK SANDAKAN SABAH	SAMSUR BIN NONGKANG ARMANJAYA BIN AMIRULLAH NORSHAHADAH BINTI ABD RAHMAN	POLITEKNIK SANDAKAN
2	CIE-TVET 2022-0041	INDUSTRIAL VISITING LECTURERS PROGRAMME IN UNDERGRADUATE STUDIES: REFLECTION ON STUDENTS' LEARNING	DR NORHASLIN ABU HASSAN MOHAMAD HANIF MOHAMAD SALLEH	POLITEKNIK TAWAU SABAH
3	CIE-TVET 2022-0042	KAJIAN DAN ANALISIS PASARAN KE ARAH TVET UNTUK PROGRAM SIJIL REKABENTUK DALAMAN 2013-2020	AMIRUDDIN MAT MUHAPIS A HAKIM MD ALIMI YASINAN RAMLI MOHAMED HARYATY SUA LIYA SUKIMIN	KOLEJ KOMUNITI SHAH ALAM
4	CIE-TVET 2022-0052	THE RELATIONSHIP BETWEEN STAFF TEAMWORK WITH THEIR JOB PERFORMANCE AT POLITEKNIK MERLIMAU	NUR SYAMSINA AB AZIZ	POLITEKNIK MERLIMAU

JADUAL PEMBENTANGAN CiE-TVET 2022

BILIK 7

MODERATOR : IDA MARIA BINTI MOHD YUSOFF

JURI 1 : DR. ZANATUL SHIMA BINTI AMINUDDIN

JURI 2 : DR. NOR RAHIMY BINTI KHALID

PIC BILIK : SITI MAHANUM BINTI SHAIK ISMAIL

SESI II
TARIKH: 5/9/2022 (ISNIN)
MASA: 2.00 – 5.00 PETANG

NO	PAPER ID	TAJUK	NAMA PEMBENTANG	INSTITUSI
1	CiE-TVET 2022-0054	PENGGUNAAN PLATFORM MICROSOFT TEAMS DALAM PENGAJARAN DAN PEMBELAJARAN KURSUS PROGRAMMING FUNDAMENTALS BAGI PELAJAR SEMESTER 2 POLITEKNIK SULTAN HAJI AHMAD SHAH: PENERIMAAN PELAJAR DAN KEMUDAHAN PENGGUNAAN PLATFORM	NOR HAMIZA BINTI GHAZALI	POLISAS
2	CiE-TVET 2022-0056	STAR/DELTA 3 PHASE SYSTEM: EDUCATIONAL TRAINER	SHARMIZA KAMARUDDIN BAKISS HIYANA ABU BAKAR RINA RAHA ABDUL HAMID	POLISAS POLISAS KK PASIR SALAK
3	CiE-TVET 2022-0049	KAJIAN GAYA PEMBELAJARAN TERHADAP PELAJAR KEJURUTERAAN MEKANIKAL, POLITEKNIK MERLIMAU MELAKA	SHARNOL BIN MUSTAFA	POLITEKNIK MERLIMAU
4	CiE-TVET 2022-0011	KAJIAN KEBERKESANAN PEMBANGUNAN E-PROJEK PELAJAR DALAM PENGURUSAN DAN PEMBELAJARAN PROJEK PELAJAR DI POLITEKNIK MELAKA	HUSSEIN MD ZAN SINATU SADIAH SHAPIE SAIFFUL BAHARI OMAR	POLITEKNIK MELAKA
5	CiE-TVET 2022-0035	KEBOLEHPASARAN GRADUAN PSA: SATU KAJIAN PERBANDINGAN ANTARA GRADUAN JABATAN PERDAGANGAN DENGAN JABATAN KEJURUTERAAN	NORLELA BINTI ZAMAN ROSAMIZA MEOR RAZAK NOR LAILA BINTI HASSAN	PSA

JADUAL PEMBENTANGAN CiE-TVET 2022

BILIK 8

MODERATOR : WAN NORHIDAYAH BINTI WAN MOHAMED NOOR

JURI 1 : DR. BAHARUDDIN BIN MUSTAPHA

JURI 2 : TS. DR. ZUNUWANAS BIN MOHAMAD

PIC BILIK : NOR LAILA BINTI HASSAN

SESI II
TARIKH: 5/9/2022 (ISNIN)
MASA: 2.00 – 5.00 PETANG

NO	PAPER ID	TAJUK	NAMA PEMBENTANG	INSTITUSI
1	CIE-TVET 2022-0010	THE DEVELOPMENT OF A CHILD ALERT AND NOTIFICATION SYSTEM FOR FORGOTTEN BABY SYNDROME	NUR SURIYA BINTI MOHAMAD RAVENRAJ A/L MOGAN	PSA
2	CIE-TVET 2022-0019	AUTOMATED ARM REHABILITATION MONITORING SYSTEM	NUR RABIATUL ADAWIYAH	PSA
3	CIE-TVET 2022-0029	DEVELOPMENT OF FOOT PRESSURE MONITORING SYSTEM USING FORCE SENSOR	NOR KHARUL AINA MAT DIN NIK NOR AFIFAH NIK MOHAMMAD JAFRI	PSA
4	CIE-TVET 2022-0031	THE DEVELOPMENT OF SKIN RESISTANCE ARDUINO-BASED MODULE FOR STRESS MONITORING	ILYA ISMAIL NURIN BATRISYIA ABD RAHMAN NADIAH DIN NURHIDAYA MUSA	PSA

BILIK 9

MODERATOR : Ts. NUR HAZLIN BINTI MD GHARIP

JURI 1 : DR. MOHD SHAHROM BIN ISMAIL

JURI 2 : DR. MOHD ELIAS BIN DAUD

PIC BILIK : ZAKIAH BINTI OTHMAN

SESI II
TARIKH: 5/9/2022 (ISNIN)
MASA: 2.00 – 5.00 PETANG

NO	PAPER ID	TAJUK	NAMA PEMBENTANG	INSTITUSI
1	CIE-TVET 2022-0006	PEMBANGUNAN ALAT BERSISTEMATIK DALAM PEMOTONGAN FABRIK DENGAN KAEDAH TEKNOLOGI PINTAR (STM) UNTUK PEMBUAT PAKAIAN	ZAINI MADARSHAH	POLITEKNIK IBRAHIM SULTAN
2	CIE-TVET 2022-0009	E-POCKET FLUID MECHANICS	WAN MAJDAH TON MAMAT ZETTY ROHAIZA BINTI MOHD SAHAK@ISHAK NAZRATULHUDA BINTI HASHIM	PSA
3	CIE-TVET 2022-0021	KAJIAN KEBERKESANAN PEMULIHAN HABA DARI PETI SEJUK BAGI KEGUNAAN PENGERINGAN PAKAIAN	SHARUL NIZAM BIN YAAKOP MUHAMAD ASRUL AFFENDI BIN MAT NOR MUHAMAD SYAMER BIN MOHD NASIR	KOLEJ KOMUNITI KOTA MARUDU KOLEJ KOMUNITI PASIR SALAK
4	CIE-TVET 2022-0025	KAJIAN PERBANDINGAN PENGAGIHAN UDARA MENGGUNAKAN FABRIC DUCT VS G.I DUCT DI KOLEJ KOMUNITI KOTA MARUDU	TS. KHAIRUL IZWAN BIN ABDUL WAHAB SHARUL NIZAM BIN YAAKOP MUHAMAD SYAMER BIN MOHD NASIR	KOLEJ KOMUNITI KOTA MARUDU
5	CIE-TVET 2022-0034	SMART WHEEL CHAIR	TS. NOORAZLAN MOHD SAMSUDDIN MUHAMMAD FAIZ ABDULLAH	PSA

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JADUAL PEMBENTANGAN CiE-TVET 2022

BILIK 10

MODERATOR : AKMARYA SYUKHAIRILNISAH BINTI MOHD AKHIR
JURI 1   : DR. PARAMESWARI A/P SHUNMUGAM
JURI 2   : DR. NOORDINI BINTI ABDULLAH
PIC BILIK   : AHMAD YUSRI BIN ABD NASIR

SESI II
TARIKH: 5/9/2022 (ISNIN)
MASA: 2.00 – 5.00 PETANG

NO	PAPER ID	TAJUK	NAMA PEMBENTANG	INSTITUSI
1	CIE-TVET 2022-0026	KAJIAN TINDAKAN: BENGKEL 'SMART' DALAM MENINGKATKAN PENGETAHUAN DAN KEMAHIRAN PENGHASILAN LAPORAN CASE STUDY	SITI JANARIAH JANTAN SITI NOOR OTHMAN NORHASLIZA ABDULLAH	POLITEKNIK SULTAN AZLAN SHAH
2	CIE-TVET 2022-0027	MEDICAL ELECTRONIC DEVICE PARAMOUNT SAFETY A HYBRID ELECTRONIC BOOK: EFFECTIVENESS FOR STUDENTS	MARIANA ROSDI KU LEE CHIN RUSNANI YAHYA	PSA
3	CIE-TVET 2022-0028	CABARAN PELAJAR DIPLOMA KEJURUTERAAN AWAM SEMESTER DUA DI POLITEKNIK SULTAN HJ AHMAD SHAH MELALUI KAEDAH PEMBELAJARAN ATAS TALIAN	LIANA ABDUL SAMAT	POLISAS
4	CIE-TVET 2022-0032	PANDEMIK COVID-19: KESAN PEMBELAJARAN ATAS TALIAN TERHADAP KEMAHIRAN PSIKOMOTOR DALAM MAKMAL KEJURUTERAAN MEKANIKAL	NOOR HAZNIDA BAKAR NURAZLINDA YAHYA@MUHAMMED	PSA
5	CIE-TVET 2022-0040	IOT-BASED FLOOD DETECTION AND EARLIER WARNING SYSTEM	PRAVIIN BASKER NUR ATHIRAH ZAKIRAH AZIZAN NUR FARWIZA ALIA IZZUDIN KANNAN RASSIAH	POLITEKNIK MELAKA

SENARAI JAWATANKUASA INDUK

Penaung
Ts. Zainab binti Ahmad

Penasihat Bersama
Dr. Zubaidah binti Aman
Dr. Ishak bin Mohamad
Dr. Hj Mohd Zahari bin Ismail

Pengerusi Bersama
Dr. Saifuddin Kumar bin Abdullah
Ts. Roseman bin Mat Jidin @ Jidin
En. Muhamad Hashim bin Ahmad

Timbalan Pengerusi
Dr Hjh Wan Rosemehah binti Wan Omar

SENARAI JAWATANKUASA PELAKSANA

Pengarah Program
Dr. Siti Khalijah Binti Jamal

Setiausaha
Nur Zahirah binti Mohd Ghazali
Noor Hasniza binti Mat Salleh

Bendahari
Dr. Noordini binti Abdullah (K)
Khasniza binti Abdul Karim
Rosamiza binti Meor Razak
Rahimawati binti Muhamad Yusoff

Floor Manager
Ts. Dr. Norani binti Abd. Karim (K)
Rabeah Adawiyah Binti Hashim
Md Alimi Bin Yasinan @ Jasman
Skh Muhammad Bin Skh Abd Rahim
Mariana Binti Rosdi

Jawatankuasa Grafik dan Multimedia
Mohammad Fahmy bin Ibrahim (K)
Mohd Hanif Bin Selamat

Jawatankuasa Laman Web Program, Hebahan dan Promosi
Dr. Parameswari A/P Shunmugam (K)
Halimaton Saadiah binti Sa'don
Norhayati Binti Ahmad Alwi
Nurul Fazilah Binti Samuri
Murusinida Binti Che Mood
Zaid bin Junus
Noor Zahilah binti Rapal
Nur Shahafiza binti Din
Shazrina binti Mohamed Isa

Jawatankuasa Pendaftaran Peserta dan Dokumentasi
Dr. Norasiah binti Muhammad (K)
Norsa'aidah Binti Sa'aid
Nurul Izza Binti Redzuan
Nurus Sadiqin Binti Abdul Razak Khan
Shariza Azwin binti Yahaya
Nurfarahaizan Binti Idris

SENARAI JAWATANKUASA PELAKSANA

Jawatankuasa Reviewer

Dr. Murugadas A/L Ramdas (K)
Ainiza Binti Silim
Pushpalatha a/p Appanaidu
Rahida Binti Ramli
Nurfadillah Binti Ahmad Mahmud
Hasni Binti Hashim
Mazwina Hanim Binti Abu Bakar
Azma Husnaiza Binti Abdul Aziz
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Norsyila Binti Rashid
Julianti Binti Samsudin
Khasniza Binti Abd Karim
Norlela Binti Zaman
Maziharita Binti Mohamood
Norfaizah Binti Abas
Shareh @ Shareaha Binti Din

Jawatankuasa Panel Penilai dan Anugerah

Dr. Aziam binti Mustafa
Suria Binti Md. Yusof
Siti Aishah Binti Ab Jalil
Nor Laila Binti Hassan
Siti Mahanum Binti Shaik Ismail
Siti Rawaidah Binti Mohd Razikin
Haryanti Binti Abdullah
Zakiah Binti Othman
Sarimah Binti Che Hassan

Jawatankuasa Teknikal Persediaan Platform dan Moderator

Ts. Ilya binti Ismail (K)
Hjh Salizahanim binti Leman
Nagaajothi a/p Adin Naraina
Siti Hasliana binti Thalji

SENARAI JAWATANKUASA PELAKSANA

Jawatankuasa Penerbitan dan Dokumentasi
Ts. Dr. Ainul Haezah binti Noruzman (K)
Yusnita binti Yusof
Dr. Siti Anizah binti Muhamed
Muhammad Afiq Faisal bin Muhammad Ilias
Mohd Firdaus bin Sedet

Jawatankuasa Buku Program
Atikah Fatma binti Md Daud (K)
Noraini binti Hj Naseran

Jawatankuasa Sijil dan Cenderahati
Fariza binti Zahari (K)
Nor Khairul Aina binti Mat Din
Nur Syafiqah Abdullah @ Winnie Itom @ Marc
Mariana binti Rosdi

Jawatankuasa Protokol dan Media
Herlina Ainizawati binti Zakaria (K)
Ts. Salhana binti Sahidin @ Salehudin
Siti Zaliha binti Omar @ Othman
Norbaiti binti Ridzuan

Jawatankuasa Teks Ucapan dan Kata Aluan
Noor Haznida binti Bakar (K)
Ts. Wan majdah binti Ton Mamat
Nurazlinda binti Yahya

Jawatankuasa Majlis Pelancaran dan Jamuan
Siti Nurul Huda binti Romli (K)
Sarizun binti Mohamad Sidek
Diana Malini binti Jarni
Rabiatul Adawiyah binti Rosli
Aliza binti Md Atan
Norasiah binti Ali

Jawatankuasa Pengacaraan Majlis
Aliza binti Abdul Razak (K)
Muhammad Safwan bin Abdullan
Siti Rawaidah binti Mohd Razikin

Jawatankuasa Persiapan Tempat Majlis Pelancaran
Tn. Hj. Jasni bin Mohd Noor
Mohd Hafizi bin Hashim

NOTA

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*12th National Conference in Technical
Education and Vocational Training
(CiE-TVET) 2022*