

IRTCTC NEXUS



Introducing the **IRTCTC NEXUS**, the revised newsletter of the Integrated Research and Training Center (IRTC) Formerly known as IRTC Updates, our newsletter has a new name that embodies our mission to connect and share the latest advancements. **"NEXUS"** highlights our role as the hub for Research, Extension, Production, and Training, reflecting our commitment to collaboration and innovation. Each edition will showcase our achievements, ongoing projects, and future initiatives, uniting the TUP community and partners in our shared journey toward excellence.

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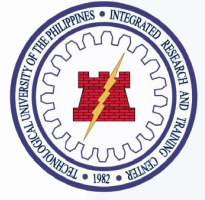
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PRESIDENT'S CORNER

To the esteemed TUP community,

As we embark on this transformative journey together, let us draw profound inspiration from the "Bagong Pilipinas" pledge: "Magiging instrumento ako sa pagsulong ng kagalingan, karunungan, at kapayapaan." This powerful declaration is more than just words; it is our guiding light, urging each of us to become champions of excellence, wisdom, and peace.

At the Technological University of the Philippines (TUP), we are more than students, faculty, and staff—we are a united family, bound by a shared commitment to elevate our institution, our nation, and our fellow Filipinos. We are not here merely as leaders or supervisors directing others; we are here as partners in a common mission, working together to foster growth and excellence.

Let us strive for excellence in all that we do, upholding the highest standards of skill and integrity. Our collective dedication to learning and innovation will propel TUP and our country to new heights, demonstrating our commitment to creating meaningful change.

Each of us plays a vital role in this collective effort. It is crucial that we focus on being part of the solution rather than just identifying problems or pointing out faults. By working together, valuing each other's contributions, and fostering a culture of mutual respect and understanding, we can overcome any challenge and achieve our shared objectives. Our mission extends beyond individual success; it is about elevating TUP, enriching our community, and contributing to the progress of our nation as a whole.

I understand that there may be differing opinions and challenges along the way. However, let us approach these with an open heart and a constructive perspective. Our goal is to work through differences and build a united stance that embraces the spirit of the 'Bagong Pilipinas,' becoming true instruments of positive change.

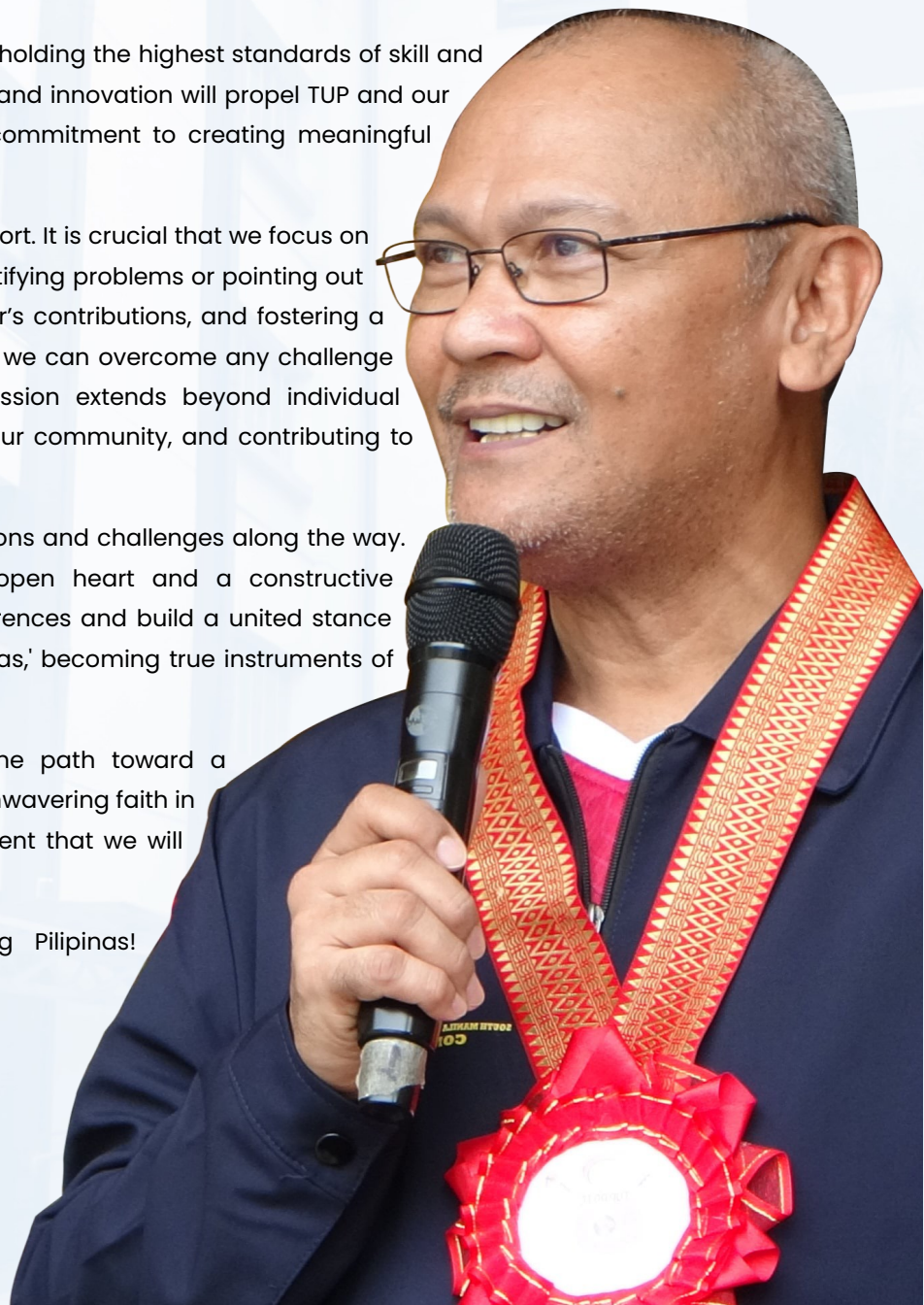
Together, as one TUP, we can illuminate the path toward a brighter, more prosperous future for all. With unwavering faith in our collective vision and abilities, I am confident that we will achieve great things.

Mabuhay ang TUP! Mabuhay ang Bagong Pilipinas!

Sincerely,

REYNALDO P. RAMOS

University President



Embracing Integrity: A Call to Excellence

In his recent State of the Nation Address (SONA), President Ferdinand "Bongbong" Marcos Jr. delivered a message that resonates deeply: "Laging gawin ang tama at mabuti" (always do what is right and good). This call to integrity serves as a guiding principle for every Filipino, reminding us that true progress stems from doing what is just and ethical.

As public servants and members of the Technological University of the Philippines (TUP) community, we are called to uphold the highest standards of ethics, transparency, and accountability. In an era of complex challenges, President Marcos' message underscores the importance of leadership rooted in integrity. By choosing what is right and good, we foster trust, unity, and progress—not just for ourselves but for future generations.

TUP serves as a cornerstone in shaping leaders equipped with skills and grounded in strong ethical values. By fostering integrity and excellence in education

we prepare our students to become agents of positive change, ready to address challenges such as economic recovery, social justice, and sustainability. President Marcos' call highlights the essential role of collective effort by every Filipino in overcoming these national challenges.

As we embrace this vision, let us renew our commitment to establishing TUP as a beacon of hope and progress. By cultivating a culture of integrity and steadfastly choosing what is right and just, we honor our heritage, fortify our democracy, and create a path toward a brighter future. Together, we can transform our university, our communities, and our nation—anchored in values that inspire enduring and meaningful change.

Let us unite to create a Philippines defined by righteousness, compassion, and excellence. Through our shared commitment, TUP can continue to lead in education and serve as a cornerstone of integrity and progress for generations to come.



Dr. Reynaldo P. Ramos: A Visionary Leader Honored with the 2024 AITAA Distinguished Alumni Award

The Technological University of the Philippines (TUP) beams with pride as Dr. Reynaldo P. Ramos is honored with the esteemed 2024 Asian Institute of Technology Alumni Association (AITAA) Distinguished Alumni Award. This distinguished recognition celebrates Dr. Ramos' exceptional contributions to education and public service, underscoring his visionary leadership and steadfast commitment to driving societal transformation.

A Triumph of Excellence

The awarding ceremony, held on November 23, 2024, during the 53rd AITAA Governing Board Meeting in Vientiane, Lao PDR, brought together distinguished alumni and dignitaries from across Asia. Dr. Ramos, donning the traditional Barong Tagalog, stood proudly among an elite cohort of honorees celebrated for their profound impact in their respective fields.



In his acceptance speech, Dr. Ramos dedicated the award to the TUP community and the countless lives he has touched through his work. "Education is not merely a pathway for individual growth; it is a catalyst for societal progress," he shared. "This recognition deepens my commitment to inspiring change through the power of knowledge, innovation, and dedicated service."

A Legacy Built on Leadership and Vision

As a distinguished graduate of the Asian Institute of Technology (AIT), Dr. Ramos embodies the values of integrity, innovation, and service. Founded in 1959, AIT is a globally renowned institution dedicated to advancing higher education and research in engineering, technology, and sustainable development across Asia. AIT's impact extends beyond its academic excellence; it serves as a catalyst for regional cooperation, fostering knowledge exchange, and promoting sustainable development goals throughout Asia.

AIT alumni are known for their leadership roles in a wide range of sectors, including government, industry, and academia, and the AITAA Distinguished Alumni Award recognizes those who exemplify this legacy. Dr. Ramos' career is a testament to these ideals, marked by groundbreaking advancements in education and public governance that have positively transformed countless lives.

Under his visionary leadership, TUP has risen as a hub of academic excellence and innovation. Dr. Ramos has forged strategic partnerships, expanded opportunities for students, and reinforced TUP's role in shaping future leaders and innovators. His tireless commitment inspires not just the TUP community but also the broader educational and public service sectors.

A Trailblazing Path to Distinction

The AITAA Distinguished Alumni Award, one of the highest honors conferred by the association, recognizes individuals whose exemplary contributions have created significant societal impact. The selection process, involving nominations from alumni chapters worldwide, ensures only the most remarkable achievements are acknowledged.

Dr. Ramos' recognition in the Public Sector Category reflects his pioneering work in governance, policymaking, and community development. His dedication to serving others sets a benchmark for future leaders striving to make a difference.

An Inspiration for Future Generations

Dr. Ramos' journey from an AIT graduate to a transformative leader in education and governance illustrates the profound impact of vision, determination, and service. His story is a beacon of hope, showcasing the boundless possibilities that education and leadership can unlock. For the TUP community and the global AIT alumni network, his achievements inspire action and commitment to creating positive changes.

Guiding TUP Toward a Brighter Future

As TUP celebrates this monumental achievement, the university community stands united in its commitment to excellence, drawing strength from Dr. Ramos' example. His recognition as a 2024 AITAA Distinguished Alumni Awardee reaffirms TUP's mission to cultivate world-class leaders who will drive progress in the Philippines and beyond.



Congratulations, Dr. Reynaldo P. Ramos!

Your TUP family is proud and deeply inspired by your achievements. May your visionary leadership continue to light the way for future generations, inspiring them to reach new heights and make a lasting impact on the world.

TUP's 123rd Foundation Anniversary: A Grand Celebration of Legacy, Innovation and Unity



The Technological University of the Philippines (TUP) proudly marks its 123rd Foundation Anniversary with a week-long celebration from December 14–21, 2024. Anchored on the theme “TUP @ 123: Transcend, Unite, Progress – Igniting Innovations Through Linkages and Partnerships,” this milestone brings the TUP community together to honor its storied legacy while looking ahead to a future shaped by innovation and collaboration.

The festivities began with a grand Opening Program on December 14, organized by Dr. Arjun A. Ansay, Director of Alumni Affairs and IRTC faculty. Held at the Integrated Research and Training Center, the program was a powerful symbol of unity, featuring the presence of former TUP Presidents Dr. Fedeserio Camaraao, Dr. Olympio Caparas, and Dr. Jesus Rodrigo Torres, who joined in solidarity with the current president, Dr. Reynaldo P. Ramos. The program also celebrated the achievements of TUP's Outstanding Alumni and included an inspiring keynote address by Dr. George P. Tizon, whose

remarkable journey exemplifies the transformative power of TUP education.

The week is filled with vibrant activities that embody TUP's excellence in academics, culture, and service. The CIT Alumni Cup and TUP Alumni Homecoming energized the celebration's opening day, followed by the Wreath-Laying Ceremony on December 16 to honor the bravery and sacrifice of TUP alumni veterans. A Thanksgiving Mass on December 17 fostered a spirit of gratitude and reflection among the TUP community.



For sports enthusiasts, the ADFA Sports Exhibition showcases thrilling matches at the TUP Covered Court throughout the week. December 18 focuses on intellectual growth with the Academic Congress, featuring discussions on cutting-edge advancements in education and research. This academic celebration continues on December 19 with the CIT Quiz with a Twist and a Skills Competition, highlighting the ingenuity and skill of TUP's students and faculty.

On December 20, recognition takes center stage with the Gawad Parangal (R & E) honoring excellence in research and extension initiatives. Additionally, a forum on Creating Safe Spaces underscores TUP's advocacy for the implementation of the Safe Spaces Act (RA 11313), promoting inclusivity and respect within its community.



The university's cultural richness is celebrated with artistic performances, including the TUP Orchestra, Battle of the Bands, and Festival Dance, showcasing the creative spirit of TUP students and alumni.

The festivities culminate on December 21 with the TUP Advance ROTC-CMT Alumni Association Christmas Celebration, a heartwarming conclusion to a memorable week of camaraderie and cheer.



This 123rd Foundation Anniversary is a masterful blend of TUP's time-honored traditions and forward-looking innovations. It exemplifies the university's enduring mission to transcend boundaries, ignite innovation, and foster meaningful partnerships. As the TUP community celebrates this remarkable milestone, it also solidifies its commitment to shaping a brighter future for generations to come.

TUP Honors Excellence: A Glimpse into the 2024 Gawad Parangal Ceremony

The Technological University of the Philippines (TUP) recently hosted its prestigious Gawad Parangal, an annual event that celebrates the outstanding achievements and invaluable contributions of faculty researchers across the entire TUP System. Held on December 19, 2024, from 1:00 P.M. to 4:00 P.M. at the Integrated Research and Training Center (IRTC) Conference Hall, this year's ceremony coincided with TUP's Foundation Anniversary, embracing the theme: "Pagkilala at Pagtataguyod ng SALIKSIK, SERBISYO, at SIPI para sa isang matatag, maginhawa at panatag na bukas."

The Gawad Parangal ceremony recognized both Citation and Publication Awards to honor those who have excelled in research. Among the distinguished recipients of the 2024 Citation Award were Engr. Nilo M. Arago and Dr. Melbern Rose C. Maltezo from the IRTC. Their exceptional contributions highlight TUP's enduring commitment to fostering innovation and excellence in research.

Also honored during the ceremony was Dr. Hasmin T. Ignacio, Vice President for Research and Extension from the College of Science, who also received the Citation Award. This recognition underscored Dr. Ignacio's outstanding leadership and significant role in advancing TUP's research agenda, positioning her as a role model for the academic community.

In addition to Engr. Arago, Dr. Maltezo, and Dr. Ignacio, several deserving recipients from various TUP Manila colleges and campuses in Taguig, Cavite, and Visayas were also presented with Publication and Citation Awards, further highlighting TUP's commitment to excellence across academic network.



The Gawad Parangal ceremony served as a distinguished platform to honor those who have made remarkable contributions through their groundbreaking research. The awardees serve as shining examples of the values and aspirations that drive the TUP community forward in advancing knowledge and innovation.

More than just a recognition ceremony, this year's event was a celebration of the collective ambition that unites TUP. By honoring excellence, the University continues to inspire its members to reach new heights, ensuring a lasting legacy of progress, innovation, and success for future generations to come.

As a key highlight of TUP's Foundation Anniversary, the Gawad Parangal reinforced the University's dedication to excellence in education, research, and service, while also showcasing the outstanding contributions of its faculty researchers.



Dr. Melito A. Baccay Appointed Research Fellow at Shinawatra University

Dr. Melito A. Baccay, a Civil Engineering Professor and former Director of the Integrated Research and Training Center (IRTC) at the Technological University of the Philippines (TUP), has been appointed as a Research Fellow at Shinawatra University in Thailand. This prestigious three-year term, beginning in 2024, recognizes his exemplary contributions to research, education, and academic leadership, marking another milestone in his illustrious career.



In his role as Research Fellow, Dr. Baccay will spearhead groundbreaking research projects, mentor postgraduate students, and contribute to Shinawatra University's reputation for global academic excellence. Beyond leading innovative projects, he is also set to participate in international seminars, deliver guest lectures, and foster research collaborations with institutions across Asia.

Dr. Baccay's appointment comes as no surprise to those familiar with his extensive achievements. During his tenure as the Director of TUP's IRTC and as the Vice President for Research and Extension, he initiated transformative programs that elevated TUP's research landscape and fostered a culture of excellence and creativity.

Shinawatra University President Associate Professor Zhou Fei praised Dr. Baccay's appointment, noting his extensive experience and forward-thinking leadership. "Dr. Baccay brings with him an exceptional track record of academic excellence and influential research. His presence will undoubtedly strengthen Shinawatra University's position as a leading institution in fostering global knowledge exchange and innovation," said President Zhou.

The appointment further highlights Dr. Baccay's passion for nurturing the next generation of scholars and leaders. At TUP, he was celebrated not only for his groundbreaking research but also for his dedication to mentoring students and young faculty members. This commitment to fostering talent and innovation aligns perfectly with Shinawatra University's mission to advance interdisciplinary education and research for global impact.

For the TUP community, Dr. Baccay's appointment serves as a source of immense pride and inspirations. It highlights the caliber of talent

nurtured within the university and demonstrates how TUP's faculty members are making waves on the international stage. His new role at Shinawatra University represents not just a personal achievement but also a testament to the strength and global reach of TUP's academic and research programs.

As Dr. Baccay embarks on this new chapter of his career, he remains a shining example of how education, leadership, and innovation can drive transformative change. The TUP community eagerly anticipates the groundbreaking work he will accomplish at Shinawatra University and celebrates his continued journey toward making a lasting impact on the global academic landscape.



Empowering Innovation: TUP and IRTC Lead the Charge in AI and Nanoelectronics Research



The Technological University of the Philippines (TUP), through its Integrated Research and Training Center (IRTC), is advancing artificial intelligence and nanoelectronics research as a key partner in the Center for Artificial Intelligence and Nanoelectronics (CAIN). With the vision of becoming Southeast Asia's hub for AI chip development, CAIN recently launched an ambitious project,

“Design and Development of a 16-nm FinFET CMOS Multifunctional Computing-in-Memory (CiM) Architecture using a Non-Volatile One-Time Programmable Read-Only Memory (OTP ROM) for Advanced AI Applications.”

Led by Dr. Lean Karlo S. Tolentino, Dean of the College of Engineering, and supported by Engr. Lejan Alfred Enriquez and Engr. Edmund G. Monilar of the IRTC, this groundbreaking initiative, funded with PHP 42 million from the DOST Grants-In-Aid program, unites experts from top institutions and industries, including Embedded Silicon Technologies Solutions Corp. The invaluable support and expertise of Engr. Enriquez and Engr. Monilar are instrumental in propelling the project forward, fostering innovation, and advancing the frontiers of AI applications, ensuring its continued progress and success.

As part of its capacity-building efforts, CAIN organized the “Midyear Camp: Full-Custom Digital IC Design Using Open-Source Toolkits” from August 1-7, 2024, at TUP-IRTC. This intensive program trained 18 participants in advanced digital IC design through hands-on sessions and lectures. Highlights included MOSFET analysis, Linux fundamentals, open-source toolkits, and a design contest to showcase technical skills.

TUP and IRTC's active role in CAIN underscores their commitment to bridging academia and industry while positioning the Philippines as a leader in AI and nanoelectronics innovation.



PocketRehab: Affordable Filipino Innovation Redefines Telerehabilitation

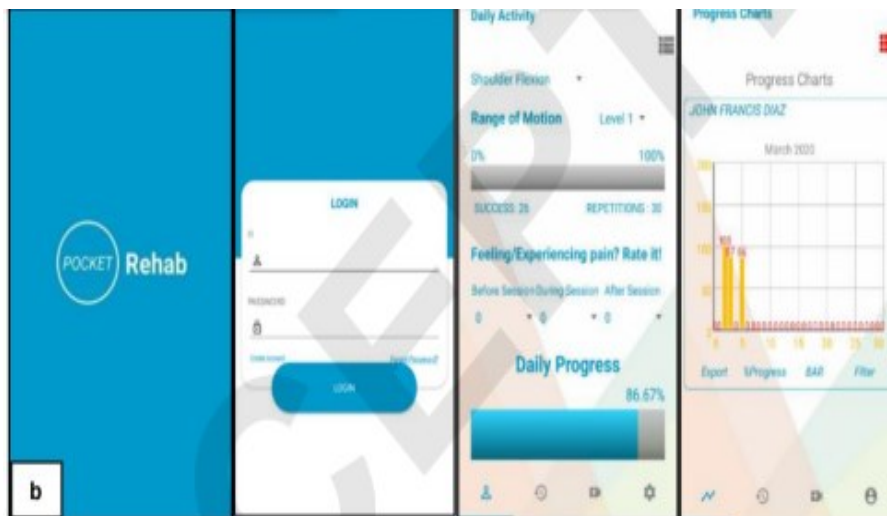
A groundbreaking collaboration between the Technological University of the Philippines (TUP) College of Engineering, the Integrated Research and Training Center (IRTC), and the Philippine General Hospital (PGH) has resulted in PocketRehab—a low-cost, wearable device revolutionizing telerehabilitation.

Spearheaded by Engr. Edmon O. Fernandez, Project Leader and Adviser from TUP's College of Engineering, and Engr. Nilo M. Arago, IRTC Director, this innovation integrates an inertia measurement unit (IMU) within a compact, strap-on design. Paired with an Android mobile app, it provides real-time motion tracking and feedback. Dr. Carl Froilan D. Leochico, a rehabilitation specialist from UP-PGH, served as the project consultant.



PocketRehab has already demonstrated its effectiveness. A 60-year-old patient with adhesive capsulitis (frozen shoulder), unable to attend in-person therapy, used the device to perform consistent rehabilitation at home. With encrypted data enabling remote monitoring, the patient achieved significant improvement in shoulder mobility and reduced pain within three weeks.

Engr. Fernandez highlighted the crucial role of Electronics Engineering (ECE) students in advancing the device's technology, noting its potential to benefit patients with orthopedic, neurologic, and rheumatologic conditions. Meanwhile, Engr. Arago emphasized PocketRehab as a testament to Filipino ingenuity and TUP's commitment to



creating practical and affordable healthcare solutions. "This innovation addresses global healthcare challenges through local expertise," he remarked.

This interdisciplinary collaboration between TUP and PGH exemplifies the synergy of engineering and medicine in improving lives. The project will soon be featured in the American Journal of Physical Medicine & Rehabilitation.

PNRI Visits IRTC for Potential Collaboration on Nuclear Energy Training and Research



On September 24, 2024, the Philippine Nuclear Research Institute (DOST-PNRI) team visited the Integrated Research and Training Center (IRTC) to explore opportunities for collaboration in capacity-building and research, specifically for the newly launched “Nuclear Plant Simulator and Analyzer Facility for R&D and Capacity-Building” (NuSIM) project. This project aims to advance nuclear energy research and training in the Philippines by creating a state-of-the-art Nuclear Power Plant (NPP) Simulator to replicate real-world nuclear plant operations.

Led by Mark Gino E. Aliperio, a Science and Technology Fellow at PNRI, the NuSIM project seeks to strengthen the country’s nuclear energy infrastructure by simulating plant processes, enhancing procedural understanding, and ensuring safety protocols. During the visit, the PNRI team expressed a keen interest in utilizing IRTC’s well-equipped facilities to conduct specialized training programs. These programs would cater to a diverse range of participants, including students, faculty, and professionals in the energy sector, to enhance their knowledge and skills in nuclear studies.

The collaboration between PNRI and IRTC is a natural extension of TUP’s commitment to advancing research and training in energy technologies, with a particular focus on nuclear power. As the Philippines explores nuclear energy as a potential solution for sustainable and diversified energy, TUP, through IRTC, is well-positioned to support these national efforts by providing high-quality training and research facilities. This partnership is expected to play a vital role in building local expertise and capacity to meet the growing demands of the energy sector, while contributing to the country’s overall sustainability goals.



Pioneering Progress: TUP Manila Kicks Off IRTC Modernization with Cutting-Edge Testing Machine

The Technological University of the Philippines (TUP) Manila has embarked on a transformative journey in modernizing its facilities under the leadership of President Reynaldo P. Ramos. At the forefront of this initiative is the acquisition and installation of a 2000KN Universal Testing Machine (UTM), now housed at the Construction Engineering and Management Department (CEMD) laboratory within the Integrated Research and Training Center (IRTC). This milestone marks not just a significant enhancement of the University's laboratory capabilities but also the beginning of the comprehensive rehabilitation and modernization of the IRTC as a premier Research and Training Center.

The acquisition of the 2000KN UTM is the product of the collective vision and commitment of past and present IRTC directors, made possible through the steadfast support of President Ramos. As a state-of-the-art tool, the machine significantly elevates TUP's capacity for advanced material testing, enhancing opportunities for faculty, students, and researchers, while addressing the needs of both local and international academic institutions and industries. More importantly, it symbolizes the start of a broader initiative to modernize the IRTC, cementing its role as a hub for cutting-edge engineering research and training.

IRTC Director Engr. Nilo M. Arago has outlined a proactive plan to maximize the machine's potential. Training programs for TUP faculty and students are being developed to ensure its full utilization, while future offerings will extend to external clientele as part of IRTC's income-generating projects. This effort underscores the IRTC's commitment to fostering technical expertise and innovation both within and beyond the University.



With the 2000KN UTM now fully operational, the IRTC laboratory is poised to support rigorous material testing, academic excellence, and industry partnerships. This significant milestone reinforces TUP's position as a leader in engineering education and research, while setting a strong foundation for the IRTC's modernization efforts. As TUP steps forward with this modernization project, it contributes not only to the advancement of engineering education but also to the improvement of building standards and practices in the Philippines and beyond.

IRTC Faculty Shine at CIIP Summit 2024

The Integrated Research and Training Center (IRTC) of the Technological University of the Philippines (TUP) played a key role at the Critical Information Infrastructure Protection (CIIP) Summit 2024, held on October 10–11 at Sequoia Hotel Manila Bay. Engr. Nilo M. Arago, IRTC Director and Engr. Edmund G. Monilar, Head of the Information Management and Computer Engineering Department of IRTC, highlighting TUP's commitment to advancing cybersecurity education and research.



The summit offered insights on integrating AI, blockchain, and quantum computing to enhance cybersecurity, as well as the need for comprehensive legislation and international cooperation to address emerging threats. It also stressed the importance of workforce development to bridge the cybersecurity talent gap. IRTC's participation reinforced TUP's leadership in advancing digital security and fostering innovation in cybersecurity.

The summit, organized by the Japan International Cooperation Agency (JICA) and the Department of Information and Communications Technology (DICT), brought together experts to discuss protecting critical infrastructures in sectors like energy, healthcare, and finance, with a focus on emerging cyber threats, AI in threat detection, and building resilient infrastructures through public-private partnerships.

Engr. Arago and Engr. Monilar actively participated in workshops on Incident Response Planning, Securing Industrial Control Systems (ICS), and AI & Machine Learning in Cyber Defense, underscoring IRTC's role in shaping cybersecurity education and innovation in the Philippines. Their involvement also strengthened IRTC's reputation and fostered valuable connections with industry leaders and international experts.



IRTC Advances Sustainable Energy Through Fuel Cell Research Collaboration



The Integrated Research and Training Center (IRTC) team, led by Director Engr. Nilo M. Arago and Dr. Arjun G. Ansay, visited the Fuel Cell Research and Testing Center at DOST-ITDI in Taguig City on July 10, 2024, reaffirming their commitment to advancing sustainable energy innovation. Accompanied by Prof. Carlos E. Zapanta, Engr. Almira H. Darilag, and Engr. Gensen Cariño, the team explored cutting-edge fuel cell technologies and discussed collaborative opportunities with ITDI leaders, Engr. Apollo Victor O. Bawagan and Dr. Ronaldo P. Pareño Jr.

During the visit, the IRTC team gained valuable insights into the state-of-the-art facility's advanced methodologies in materials development and testing for fuel cells. Discussions focused on joint efforts in developing innovative materials, enhancing testing capabilities, and accelerating fuel cell commercialization to promote energy sustainability.

"This collaboration strengthens our shared vision of advancing sustainable energy solutions," said Engr. Arago. Dr. Ansay highlighted the essential role of partnerships in addressing global energy challenges.

The visit marks a significant milestone in IRTC's mission to drive innovation and contribute to a greener, more sustainable future through collaborative research and development.



Powering the Future: IRTC and TUP Forge Global Partnership with CALCE in Battery Research

The Integrated Research and Training Center (IRTC), in partnership with the Technological University of the Philippines (TUP) College of Engineering, has initiated a collaboration with the Center for Advanced Life Cycle Engineering (CALCE) at the University of Maryland, USA. CALCE, led by IEEE Fellow and American Society of Mechanical Engineers member Professor Michael Pecht, is a global leader in lithium-ion battery research for over 25 years.



CALCE specializes in battery design, manufacturing, reliability, and safety, alongside supply chain management and advanced data science techniques for battery health monitoring. Its state-of-the-art facilities enable cutting-edge testing, failure analysis, and the development of innovative sensing technologies. Supported by global industry leaders and government.

Engr. Nilo M. Arago, IRTC Director, and Dr. Lean Karlo Tolentino, Dean of TUP's College of Engineering, are recognized as global collaborators of CALCE. Their partnership was featured in CALCE's October 2024

Newsletter, which also highlighted a keynote by Professor Pecht on battery fire safety during the OECD Ministerial Meeting on Consumer Protection in Paris.

Engr. Arago emphasized the partnership's impact: "This collaboration with CALCE aligns with IRTC's mission to advance sustainable energy solutions and positions TUP as a contributor to global battery research." Dr. Tolentino added, "Our collaboration with CALCE highlights the global relevance of Filipino expertise in energy research and innovation."

IRTC-MEED Team Conducts Successful Benchmarking Visit to DOST-MIRDC

The faculty and staff of the Integrated Research and Training Center – Manufacturing and Engineering Education Department (IRTC-MEED), led by Director Engr. Nilo M. Arago, conducted a productive benchmarking visit to the Department of Science and Technology Metals Industry Research and Development Center (DOST-MIRDC) on July 18, 2024. Organized by Ms. Zalda R. Gayahan of MIRDC's Technology Diffusion Division, the visit took place at the Advanced Manufacturing Center (AMCen) Conference Room.

The IRTC-MEED delegation included Engr. Arago, Prof. Carlos E. Zapanta, Prof. Gonzalo Salvador Jr., Engr. Almira H. Darilag, Mr. Rannie C. Quiambao, and Mr. Andres Maglaqui. The event commenced with a welcome message from Engr. Jonathan Q. Puerto, Deputy Executive Director for Technical Services at MIRDC, who emphasized the importance of collaboration between



academic institutions and research centers.

The visit featured presentations by MIRDC specialists, including Engr. Florante A. Catalan, Engr. Sharel Shyateza M. Abellar, and Mr. Reynaldo L. dela Cruz Jr. Engr. Catalan discussed advancements in material testing and analysis, Engr. Abellar highlighted innovative technical solutions and industry collaborations, and Mr. dela Cruz Jr. detailed MIRDC's training programs for industry professionals. Engr. Arago commended the visit for its valuable contributions to IRTC-MEED's research and training capabilities. The event concluded with a tour of



AMCen's state-of-the-art facilities, reinforcing the importance of staying current with technological advancements in the manufacturing industry.

The IRTC-MEED and MIRDC teams are optimistic about future collaboration opportunities, which are expected to enhance education and training quality and contribute to the growth of the Philippine metals industry.

TUP's Ignite Series: Empowering Excellence Through Strategic Learning

The Technological University of the Philippines (TUP) recently concluded its Ignite Series—a set of Master Classes aimed at enhancing knowledge, improving efficiency, and promoting transparency in governance. These sessions were part of TUP's ongoing effort to foster a culture of excellence and continuous learning among its faculty and staff. The Integrated Research and Training Center (IRTC) also actively participated in these sessions, contributing to the success of the initiative.



Master Class 1: BOR 101 – Understanding the Board of Regents and How to Win Their Approval

Held on October 17, 2024

The first session provided valuable insights into the workings of the Board of Regents (BOR), equipping participants with the knowledge needed to navigate the intricacies of the BOR structure and successfully secure approvals for academic and administrative initiatives.

Master Class 2: Making Processes More Efficient – The ARTA Way of Process Reengineering

Held on October 24, 2024

This session focused on enhancing government processes using the Anti-Red Tape Authority's (ARTA) methodology for process reengineering. It highlighted the importance of government transparency and the implementation of efficient processes in public transactions.



Master Class 3: A Beginner's Guide to the Procurement Process

Held on November 29, 2024

The final session provided an overview of the procurement process, offering practical insights and guidelines for navigating the complexities of public procurement, especially for beginners.



Throughout the Ignite Series, the IRTC played an essential role in ensuring the smooth execution of the activities, contributing its expertise to the overall success of the series. By participating in these Master Classes, TUP strengthened its internal capabilities and reinforced its commitment to promoting efficiency and transparency in governance. The initiative ultimately enhanced TUP's academic and administrative operations, positioning the university as a leader in public service excellence and innovation.

TUP President Ramos Inspires Students to Discover the Transformative Power of Books

The Technological University of the Philippines (TUP), in collaboration with the World Book Crossing Club Philippines, celebrated the 90th National Book Week with the theme “Magbasa, Mangarap, Magdiwang” on November 29, 2024. A highlight of the event was the inspiring message delivered by TUP President, Engr. Reynaldo P. Ramos, Ph.D., EnP, titled “Kuwento ni Pres: Sa Likhang Aklat, May Likhang Pangarap.”



President Ramos captivated the audience with his reflections on the transformative power of books and how they can shape dreams and aspirations. Through his keynote, he emphasized the importance of reading in fostering creativity, critical thinking, and lifelong learning among students and educators alike. His presence underscored TUP's unwavering commitment to nurturing a culture of reading and academic excellence.



The event also featured distinguished guest speakers, including Atty. Christian E. Rivero from the Department of Education, who shared insights through “Pangalagkalag Series: Lagonoy Essay,” and Dr. Sherwin M. Perlas, Dean of the College of Education at Romblon State University, who presented “Lumalabay Nga Daw Aso.”

An awarding ceremony capped the celebration, recognizing the winners of the 90th Book Week activities. The event, held at the University Library, demonstrated the university's dedication to promoting literacy and inspiring the TUP community to dream big through the power of books.

This Book Week celebration is a testament to TUP's mission of empowering students to explore new horizons and contribute meaningfully to society through education and inspiration.

IRTC Updates Operational Manual and Introduces Facility Usage Fee Structure with Discount Policy

The Integrated Research and Training Center (IRTC) has taken a significant step toward operational excellence by revising its operational manual. This update aims to align with evolving industry standards, enhance regulatory compliance, and bolster operational efficiency, ensuring that the Center remains at the forefront of its field.

Operational manuals play a vital role in standardizing processes, streamlining onboarding, and enhancing safety and efficiency. Acknowledging their importance, the Integrated Research and Training Center (IRTC), under the leadership of Director Engr. Nilo M. Arago and the strategic guidance of TUP President Reynaldo P. Ramos, undertook a thorough review of its manual.

This initiative encompassed benchmarking against leading facilities in Metro Manila, engaging stakeholders through consultations, and incorporating best practices drawn from both national and international frameworks.

One of the highlights of the updated manual is the introduction of a structured fee framework and a new discount policy specifically for the usage of IRTC's facilities. These additions aim to ensure fair and transparent pricing while making the Center's resources accessible to a broader range of stakeholders. The fee structure is designed to support the Center's operational sustainability, while the discount policy reflects IRTC's commitment to inclusivity and service equity.

Beyond the financial framework, the manual reinforces the Center's dedication to continuous improvement by providing updated guidelines for training programs, risk management strategies, and streamlined communication processes.

"The revised manual reflects our commitment to excellence, adaptability, and making our facilities accessible to diverse users," said Engr. Arago. "It positions IRTC as a dynamic institution that effectively serves its clients while fostering innovation and growth."

The updated operational manual, which is pending final approval by the TUP Board of Regents, underscores IRTC's mission to remain relevant and competitive. It stands as a testament to the Center's dedication to delivering high-quality services and contributing to the university's broader strategic goals.



TUPARIN 2024: Amplifying Research and Innovation

The Technological University of the Philippines (TUP) recently hosted the Research Colloquium TUPARIN 2024: Amplifying Research and Innovation on December 11, 2024. The event emphasized the vital role of research in driving a resilient and sustainable future. Organized by the Integrated Research and Training Center (IRTC), it brought together leading experts from academia, industry, and government to explore pioneering technological advancements.



The IRTC was at the forefront of the event, with Engr. Lejan Alfred Enriquez and Engr. Edmund G. Monilar sharing their pioneering research on AI and sustainable energy solutions. Their work, funded by a PHP 42 million DOST Grant, is a key example of how TUP's research is shaping the future of energy and technology. IRTC Director Engr. Nilo M. Arago, Engr. Jassine C. Garna, Engr. Almira C. Darilag, Engr. Nilo M. Arago, Prof. Carlos E. Zapanta, and other IRTC faculty also contributed to discussions, showcasing their expertise in various fields.



Additionally, faculty from the Research and Extension Sector, along with representatives from various colleges, actively participated in the event, offering valuable insights into sustainable practices and innovative solutions. Their contributions highlighted TUP's ongoing commitment to advancing research and driving meaningful change. The event underscored the university's vision to amplify research and innovation, positioning TUP as a leader in addressing global challenges through transformative, solution-driven research.

IRTC Represents TUP at 17th ASEF Classroom Network Conference



The Integrated Research and Training Center (IRTC) of the Technological University of the Philippines (TUP) proudly participated in the 17th ASEF Classroom Network (#ASEFClassNet17) Conference, held from November 11-15, 2024, at the Philippine Normal University, Manila. Themed “Learning about AI and Learning with AI,” the event gathered over 100 educators from 33 countries to explore the transformative role of artificial intelligence (AI) in education.

Representing TUP was Engr. Edmund G. Monilar of IRTC-IMCED, who joined discussions on AI-driven pedagogy, interactive workshops, and project pitching sessions. Highlights included cultural exchanges, educational visits

to De La Salle Zobel, and insights into innovative AI applications for personalized learning and teaching.

TUP, a proud event sponsor, emphasized its commitment to global collaboration and technological innovation. Engr. Monilar's participation reinforced IRTC's role in advancing education, with plans for future ASEF engagement to foster partnerships and enhance research and extension initiatives.

This milestone showcases IRTC's dedication to shaping the future of education through AI and international collaboration

TUP's First Research Outputs Review: A Step Toward Publication Excellence

The Technological University of the Philippines (TUP) held its 1st University Research Outputs In-House Review on July 1-2, 2024, at the IRTC Conference Hall, signifying a crucial step in elevating research quality and impact. Organized by the University Research and Development Services (URDS), the review aimed to prepare completed projects for publication, encourage interdisciplinary collaboration, and strengthen TUP's research culture.

A distinguished panel of internal experts provided critical feedback to enhance the relevance and quality of research outputs. The panel included Jervie M. Oliveros (Education and Learning), Jonel C. Macalisang (Computer Science and Technology), Dr. Arthur J. Lagbas (Environmental Science and Studies), Dr. Lean Karlo S. Tolentino (Technology and Innovation), Dr. Nilo M. Arago (Agricultural Engineering), Jennifer P. Alinsunod (Social Sciences and Community Development), Dr. Michael Bhubet B. Baluyot (Food

Science and Nutrition), Dr. Norway J. Pangan (Chemistry and Materials Science), and Dr. Emmanuel L. Ferrer (Biotechnology and Chemistry).

The Integrated Research and Training Center (IRTC) played a vital role in hosting the event, demonstrating its dedication to fostering innovation and supporting TUP's mission. The review successfully addressed gaps between completed research and publications, highlighting TUP's commitment to achieving its ASEAN vision of academic and technological excellence.



TUP and IRTC Strengthen Commitment to Quality with ISO 9001:2015 Recertification



The Technological University of the Philippines (TUP) Manila Campus has once again demonstrated its dedication to excellence by successfully passing the ISO 9001:2015 Quality Management System (QMS) Recertification Audit held on July 30-31, 2024, at the Audio-Visual Room of the Administration Building. This significant achievement underscores TUP's unwavering commitment to delivering high-quality education and services while maintaining a culture of continuous improvement and customer satisfaction.

A critical contributor to this success was the Integrated Research and Training Center (IRTC), whose active

participation and expertise were instrumental throughout the recertification process. Notable IRTC representatives, Engr. Nilo Arago, Dr. Arjun Ansay, and Ms. Virgie Villamar, played crucial roles in preparing for and ensuring the audit's success. Their efforts highlighted the center's focus on fostering innovation, upholding quality standards, and aligning its operations with the university's overarching goals.

Achieving the ISO 9001:2015 certification reinforces TUP's reputation as a reliable provider of high-quality education and efficient operations. This milestone assures students of a world-class learning environment, provides faculty and staff with robust support and resources, and emphasizes the university's commitment to organizational excellence.

Congratulations to the entire TUP community, especially the IRTC, for this well-deserved recognition. The recertification is not only a testament to past successes but also a promise of a future anchored in quality, innovation, and continuous improvement. TUP's collaborative and forward-thinking spirit ensures it remains a trailblazer in engineering and technology education.



IRTC Sparks Innovation at Capability Enhancement Event



The Integrated Research and Training Center (IRTC) of the Technological University of the Philippines (TUP) hosted a transformative Capability Enhancement Activity on July 4-5, 2024, at Luljietta's Spa Garden, Antipolo City. With the theme "Innovation, Resilience, Transformation, Collaboration: A Journey to Excellence," the event aimed to realign IRTC's mandates and prepare research and extension proposals for the 2025 Research and Extension Colloquium.

TUP President Dr. Reynaldo P. Ramos delivered an inspiring message, followed by welcome remarks from IRTC Director Engr. Nilo M. Arago. Prof. Carlos Zapanta set the tone with the activity rationale. Esteemed speakers brought valuable insights: former IRTC Director Engr. Nenet C. Graza reflected on IRTC's legacy and future; Engr. Lejan Alfred C. Enriquez emphasized collaboration and innovation; Engr. Timothy M. Amado provided tips for refining research proposals; Prof. Dave Carlos A. Calixto highlighted key elements for extension initiatives; and Engr. Jassine C. Garna underscored gender inclusivity. Engr. Arago unveiled a visionary "IRTC Horizon: 5-Year Blueprint," and Engr. Edmund G. Monillar shared insights on website design.

Participants engaged in workshops to craft research and extension proposals, fostering collaboration and innovation. The event also recognized IRTC's administrative staff for their essential behind-the-scenes support, ensuring its success.

With the insights gained and proposals developed, IRTC is set to make significant strides in advancing TUP's research and extension landscape, reinforcing its leadership in innovation and excellence.



TUPMAEA Members and IRTC Staff Join Parallel Teambuilding and GAD Seminar in Laguna



Members of the TUP-Manila Administrative Employees Association (TUPMAEA), including administrative staff from the Integrated Research and Training Center (IRTC), participated in a parallel Teambuilding and Gender and Development (GAD) Seminar at Amazing View Mountain Resort, Mabitac, Laguna, on November 19-20, 2024.

The program's parallel format enabled simultaneous activities, maximizing time and resources while providing participants with engaging opportunities for growth. The Teambuilding sessions fostered teamwork and strengthened workplace camaraderie, while the GAD Seminar focused on promoting gender equality and creating a more inclusive university environment.

Held in the tranquil setting of the mountain resort, the event highlighted TUPMAEA's commitment to the holistic development of its members. By bringing together staff from various university units, including the IRTC, the program showcased the power of collaboration in advancing professional and advocacy goals.



IN-FOCUS: THE IRTC DEPARTMENT HEADS



PROF. REYNALDO O. BAARDE

Head, Construction Engineering and Management Department (CEMD)

Prof. Reynaldo O. Baarde, with over 30 years of expertise in Civil Engineering, exemplifies a commitment to excellence in research, training, and construction material innovation. As Head of the Construction Engineering and Management Department (CEMD) and Administrator of the IRTC Building, his leadership has been instrumental in modernizing facilities, including acquiring a 2000kN Universal Testing Machine that elevated the department's capabilities.

Armed with academic credentials that include a Bachelor's and Master's in Civil Engineering, and a Doctorate in Technology in progress, Prof. Baarde stays at the forefront of industry trends through continuous learning and professional engagement. His vision emphasizes leveraging emerging technologies to address modern infrastructure demands while fostering a culture of innovation and excellence.

Prof. Baarde's methodical leadership and dedication to mentorship have positioned CEMD as a leader in construction material research and testing. His legacy is reflected in the thriving environment he has cultivated for students and professionals, solidifying TUP's role in shaping the future of Civil Engineering in the Philippines.



PROF. CARLOS E. ZAPANTA

Head, Manufacturing and Energy Engineering Department (MEED)

With over 26 years of unwavering dedication to TUP, **Prof. Carlos E. Zapanta** has become a trailblazer in energy innovation and sustainable technologies. A Mechanical Engineering graduate with a Master's in Energy Engineering, he has spearheaded groundbreaking projects like engine testing for Coco Biodiesel and the Philippine Electric Vehicle Policy Analysis, earning national recognition.

As Head of the Manufacturing and Energy Engineering Department (MEED), Prof. Zapanta drives advancements in renewable energy and advanced manufacturing, despite challenges such as limited funding. His resilience and strategic partnerships ensure MEED remains a center of excellence, contributing significantly to national development and environmental sustainability.

Outside of academia, Carlos balances his passion for innovation with personal interests like basketball, coin collecting, and exotic pet care. Guided by his mentor, Engr. Felipe Ronald Argamosa, his leadership style is rooted in mentorship and collaboration. Prof. Zapanta's efforts continue to shape the future of renewable energy, leaving a legacy of impactful contributions to the nation.

**PROF. LAARNI G. CORONEL**

Head, Power Engineering and Electronics Department (PEED)

Engr. Laarni G. Coronel's leadership journey at TUP spans over 35 years, driven by a passion for technology and sustainable development. From his start as a marketing engineer to his current role as Head of the Power Engineering and Electronics Department (PEED), Larry's collaborative and innovative approach has consistently embraced change. With a degree in Electronics and Communication Engineering, his technical expertise has placed PEED at the forefront of groundbreaking research and training.

Under his guidance, PEED has launched initiatives like online training platforms, expanding access to advanced knowledge. Larry's inclusive leadership style fosters collaboration and ensures every team member is valued and motivated. His ability to adapt to technological advancements has made PEED a key contributor to sustainable technology.

Anchored by values of perseverance and balance, Larry treasures the support of his family and friends, which fuels his pursuit of excellence. His leadership continues to inspire the team, making PEED a model for impactful contributions to education, industry, and sustainable development.

**ENGR. EDMUND G. MONILAR**

Head, Information Management and Computer Engineering Department

Engr. Edmund G. Monilar, a seasoned professional with over 20 years of experience, bridges the gap between academia and industry with his dynamic leadership at TUP's Information Management and Computer Engineering Department (IMCED). A licensed Electronics and Communications Engineer and former Lead Web Developer, Edmund brings a wealth of knowledge from both education and IT development to his role.

Under his leadership, IMCED focuses on equipping students with skills in emerging technologies, cybersecurity, and artificial intelligence. Edmund's commitment to fostering innovation is exemplified by initiatives like the CAIN Center for Artificial Intelligence. His dedication to professional growth and teamwork has elevated the department as a hub for technological excellence, aligning with IRTC's mission of impactful education and industry solutions.

Beyond the classroom, Edmund's enthusiasm for gaming, IoT projects, and hiking reflects his innovative spirit. Inspired by mentors who emphasized integrity and service, he leads with a forward-thinking vision, ensuring IMCED remains at the forefront of technological advancements.



Mr. Ronald R. Doctor

*OIC, Multimedia Technology
Department (MTD AV)*

For over 15 years, **Ronald R. Doctor** has been an integral part of TUP's Integrated Research and Training Center (IRTC), bringing technical expertise and strong leadership as Officer-in-Charge of the Multi-Media Technology Department (MTD). With a degree in Technical Teacher Education and specialization in Electronics Engineering Technology, he meets the university's technical needs while driving continuous progress. His methodical problem-solving ensures smooth operations, from resource allocation to equipment maintenance, reinforcing his essential role in TUP's success.

Ronald's leadership focuses on empowering people, promoting integrity, and fostering innovation. He contributes to event documentation and external affairs, demonstrating adaptability and excellence. His proactive mindset allows him to turn challenges into growth opportunities, making his department a model of operational excellence.

Beyond his professional work, Ronald is passionate about music, chess, billiards, and online learning. His dedication to service and personal growth inspires others. Through his commitment to both his career and self-improvement, he has made a lasting impact on TUP. His leadership sets a high standard in the evolving world of technology.

IRTC Year-End Get-Together: A Heartwarming Celebration of Camaraderie and Gratitude



The Integrated Research and Training Center (IRTC) wrapped up 2024 with a vibrant Year-End Get-Together on December 17, celebrating another successful year with its dedicated faculty and staff. Held at the IRTC Conference Hall, the event brought together the entire IRTC family for an afternoon filled with laughter, camaraderie, and meaningful moments.

The gathering was not just about fun and food—it also became a heartfelt occasion of gratitude and reflection. A special highlight of the event was a tribute to Michael N. Arias, a long-serving administrative worker who



recently availed himself of disability retirement on June 1, 2024. Adding to the significance of the tribute, Mike's birthday was celebrated just a day before the event, making the occasion even more special

IRTC Director Engr. Nilo M. Arago read aloud messages of well-wishes written by colleagues on a commemorative picture frame gifted to Mike. He was also presented with a special gift as a token of appreciation for his years of dedicated service. The tribute served as a touching reminder of the strong bond that defines the IRTC community—more than just a hub of research and innovation, it's a family that cherishes its people.

The event's success was made possible through the generosity of our sponsors, whose contributions greatly enhanced the celebration. Their thoughtful donations, ranging from raffle prizes to support for parlor games,

added an extra layer of excitement and joy to the festivities. From household appliances to cash and gift certificates, these prizes brought smiles to the attendees, creating unforgettable moments and making the event truly remarkable.

Special thanks to Virgie Villamar for expertly coordinating the event, and to Jasinne Garna and Rannie Quiambiao for their energetic and engaging hosting. The delicious dishes, prepared by Andres Maglaqui with help from Jose Marie Adalid and Arsenio Montana, were complemented by a wide variety of made-to-order foods. Thanks also to Mr. Cristito Flores for managing the sound system and Mr. Julius Navia for capturing the event's most cherished moments. Their combined efforts, along with everyone else involved, made the celebration truly unforgettable.

The tribute to Mike served as a touching reminder of the strong bond that defines the IRTC community. More than just a hub of research and innovation, the event highlighted the Center's commitment to cherishing its people.

As the day came to a close, smiles, laughter, and shared memories highlighted the success of the gathering. The IRTC family left not only with raffle prizes but with hearts full of gratitude and a renewed sense of unity.

Here's to another year of growth, success, and camaraderie for the IRTC team!





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